

**FY2006**

**FORT CARSON**

**INSTALLATION ACTION PLAN**

Printed May 2005

## Statement of Purpose

The Fort Carson Installation Restoration Program (IRP) consists of both the Restoration Program, funded by ER,A and the Compliance Cleanup program, funded by OMA. The purpose of the Restoration Installation Action Plan (RIAP) is to outline the total multi-year restoration program for restoration sites at an installation. The plan defines restoration requirements and proposes a comprehensive approach and associated costs to continue ongoing investigations, conduct future investigations and remedial actions at each Solid Waste Management Unit (SWMU) covered under the Army's Restoration Program at the installation.

In an effort to coordinate planning information between the IRP manager, major army commands (MACOMs), installations, executing agencies, regulatory agencies, and the public, a RIAP has been completed for Fort Carson. The RIAP is used to track requirements, schedules and tentative budgets for all major Army installation restoration programs.

All site specific funding and schedule information has been prepared according to projected overall Army funding levels and is, therefore, subject to change during the document's annual review. Under current project funding, all remedies will be in place at Fort Carson by the end of 2014.

### **The following persons contributed to the formulation and completion of this Restoration Installation Action Plan:**

Deb Anderson	Colorado Department of Public Health and Environment
Tim Blume	AEC Western Region Office
Stephanie Carter	Fort Carson IRP/Engineering & Environment, Inc.
Susan Chaki	Colorado Department of Public Health and Environment
Michael Cosby	Colorado Department of Public Health and Environment
Judy Flook	Fort Carson/PBC-APLEN
Russ Hamilton	Fort Carson, SJA
Missy Holland	U.S. Army Corps of Engineers, Omaha District
Doug Jardine	Fort Carson RAB, Community Co-Chair
Burla Martin	Fort Carson, DECAM
Agnes Maxwell	Engineering & Environment, Inc. (supporting AEC)
Robert Noyes	Engineering & Environment, Inc. (supporting AEC)
William Rogers	Fort Carson IRP
Margaret Schwartz	Colorado Department of Public Health and Environment
Jerome Stolinski	U.S. Army Corps of Engineers, Omaha District
JoAnn Watson	U.S. Army Environmental Center

# Table of Contents

<i>Statement of Purpose .....</i>	<i>1</i>
<i>Approval/Concurrence.....</i>	<i>2</i>
<i>Table of Contents .....</i>	<i>3</i>
<i>Acronyms &amp; Abbreviations .....</i>	<i>5</i>
 <b>INSTALLATION INFORMATION .....</b>	 <b>7</b>
<b>CLEANUP STRATEGY .....</b>	<b>9</b>
 <b>INSTALLATION RESTORATION PROGRAM</b>	
<i>IRP Summary .....</i>	<i>11</i>
<i>IRP Contamination Assessment .....</i>	<i>12</i>
<i>Previous IRP Studies.....</i>	<i>13-1</i>
 <b>SITE DESCRIPTIONS</b>	
<i>FTC-006 LANDFILL 2/3 (1960-1978).....</i>	<i>15</i>
<i>FTC-008 LANDFILL 4 (1957) .....</i>	<i>16</i>
<i>FTC-009 LANDFILL 5 (1946-1956).....</i>	<i>17</i>
<i>FTC-011 LANDFILL 7 (1968-1978).....</i>	<i>19</i>
<i>FTC-012 LANDFILL 8 (1972-1973).....</i>	<i>20</i>
<i>FTC-013 LANDFILL 9 (1965-1973).....</i>	<i>21</i>
<i>FTC-020 GRIT OIL PIT .....</i>	<i>22</i>
<i>FTC-026 PETE’S HILL.....</i>	<i>23</i>
<i>FTC-058 FORMER VAPOR DEGREASER .....</i>	<i>24</i>
<i>FTC-079 SLUDGE TRENCH.....</i>	<i>25</i>
<i>FTC-047 LAND SPREADING FIELD (STP SLUDGE).....</i>	<i>26</i>
<i>FTC-021 FIRE TRAINING AREA &amp; FIRE TNG STORAGE AREA .....</i>	<i>27</i>
<i>FTC-044 DRAINAGE DITCH ADJACENT TO BUILDING 301.....</i>	<i>28</i>
<i>FTC-045A BATTERY ACID NEUTRALIZATION BLDG 8030.....</i>	<i>29</i>
<i>FTC-045C BATTERY ACID NEUTRALIZATION BLDG 8142.....</i>	<i>30</i>
<i>FTC-048 DEMOLITION AREA.....</i>	<i>31</i>
<i>FTC-032 VEHICLE WASH RACK STORM DRAINAGES.....</i>	<i>32</i>
<i>FTC-075 OLD CENTRAL WASH RACK.....</i>	<i>33</i>
<i>FTC-017 RANGE 1, OPEN BURN GROUNDS .....</i>	<i>34</i>
<i>FTC-018 RANGE 1A, OPEN BURN GROUNDS.....</i>	<i>35</i>
<i>FTC-024 DRMO- INACTIVE HAZ WASTE STOR AREA.....</i>	<i>36</i>
<i>FTC-033 FMR WASTE OIL/SOLV USTs, BLDG 8000.....</i>	<i>37</i>
<i>FTC-043 DIO HAZARDOUS WASTE STORAGE AREA.....</i>	<i>38</i>
<i>FTC-041 FMR LONG_TERM HAZ WASTE STOR, 8000.....</i>	<i>39</i>
<i>FTC-023 FORMER USED/WASTE OIL STORAGE TANKS .....</i>	<i>40</i>
<i>FTC-070 UST NEAR BLDG 201 .....</i>	<i>44</i>
<i>FTC-083 NORTH SPECKER AVENUE PLUMES.....</i>	<i>45</i>
<i>FTC-093 FORMER POW CAMP.....</i>	<i>47</i>
<i>Sites listed in AEDB-R as RC with ongoing LTM requirements.....</i>	<i>49</i>
<i>Sites listed in AEDB-R as RC with NFA required .....</i>	<i>50</i>

## ***SCHEDULE***

<i>Past/Projected Milestones .....</i>	<i>52</i>
<i>Schedule Chart.....</i>	<i>53-1</i>

## ***COST***

<i>Prior/Current Year Funding .....</i>	<i>54</i>
<i>Unconstrained (Required) Cost-to-Complete Chart - not included.....</i>	<i>55A-1</i>
<i>Constrained (Programmed) Cost-to-Complete Chart - not included.....</i>	<i>55B-1</i>

## ***COMMUNITY INVOLVEMENT***

<i>Restoration Advisory Board Status.....</i>	<i>56</i>
---	-----------

## Acronyms & Abbreviations

<b>AEC</b>	U S Army Environmental Center
<b>AEDB-R</b>	Army Environmental Database - Restoration
<b>AST</b>	Aboveground Storage Tank
<b>ATSDR</b>	Agency for Toxic Substances and Disease Registry
<b>COC</b>	Contaminants of Concern
<b>CRP</b>	Community Relations Plan
<b>CTC</b>	Cost-to-Complete
<b>cy</b>	cubic yards
<b>DA</b>	Department of Army
<b>DERP</b>	Defense Environmental Restoration Program (now ER,A)
<b>DD</b>	Decision Document
<b>DNAPL</b>	Dense Non-Aqueous Phase Liquid
<b>DRO</b>	Diesel Range Organics
<b>DSERTS</b>	Defense Site Environmental Restoration Tracking System (now AEDB-R)
<b>EPA</b>	(United States) Environmental Protection Agency
<b>ER,A</b>	Environmental Restoration, Army (formerly DERA)
<b>FFA</b>	Federal Facility Agreement
<b>FFSRA</b>	Federal Facility Site Remediation Agreement
<b>FS</b>	Feasibility Study
<b>ft</b>	foot
<b>ft<sup>2</sup></b>	square feet
<b>FY</b>	Fiscal Year
<b>gal</b>	gallon
<b>gpd</b>	gallons per day
<b>GRO</b>	Gasoline Range Organics
<b>GW</b>	Groundwater
<b>HRS</b>	Hazard Ranking System
<b>HSA</b>	Hollow Stem Auger
<b>IAP</b>	Installation Action Plan
<b>IM</b>	Interim Measure
<b>IRA</b>	Interim Remedial Action
<b>IROD</b>	Interim Record of Decision
<b>IRP</b>	Installation Restoration Program
<b>IWTP</b>	Industrial Wastewater Treatment Plant
<b>K</b>	\$1,000
<b>kg</b>	kilograms
<b>LTM</b>	Long-term Management
<b>LTO</b>	Long-term Operation
<b>MATES</b>	Mobilization and Training Equipment Site
<b>MCL</b>	Maximum Contaminant Level
<b>mg</b>	milligrams
<b>MMRP</b>	Military Munitions Response Program
<b>MW</b>	Monitoring Well
<b>NE</b>	Not Evaluated
<b>NFA</b>	No Further Action
<b>NGB</b>	National Guard Bureau
<b>NPDES</b>	National Pollutant Discharge Elimination System

## Acronyms & Abbreviations

<b>NOV</b>	Notice of Violation
<b>NPL</b>	National Priorities List
<b>OB/OD</b>	Open Burning/Open Detonation
<b>OU</b>	Operable Unit
<b>O&amp;M</b>	Operation & Maintenance
<b>PAH</b>	Poly Aromatic Hydrocarbons
<b>PA</b>	Preliminary Assessment
<b>PBC</b>	Performance-Based Contract
<b>POL</b>	Petroleum, Oil & Lubricants
<b>POM</b>	Program Objective Memorandum (budget)
<b>PP</b>	Proposed Plan
<b>PRG</b>	Preliminary Remediation Goal
<b>PY</b>	prior year
<b>RA</b>	Remedial Action
<b>RA(O)</b>	Remedial Action - Operation
<b>RAB</b>	Restoration Advisory Board
<b>RC</b>	Response Complete
<b>RCRA</b>	Resource Conservation and Recovery Act
<b>RD</b>	Remedial Design
<b>REM</b>	Removal
<b>RFA</b>	RCRA Facility Assessment
<b>RI</b>	Remedial Investigation
<b>RIP</b>	Remedy in Place
<b>ROD</b>	Record of Decision
<b>RRSE</b>	Relative Risk Site Evaluation
<b>RWQCB</b>	Regional Water Quality Control Board
<b>SARA</b>	Superfund Amendments and Reauthorization Act
<b>SATCOM</b>	U.S. Army Satellite Communications
<b>SI</b>	Site Inspection
<b>SVOC</b>	Semi-Volatile Organic Compounds
<b>SWMU</b>	Solid Waste Management Unit
<b>TAPP</b>	Technical Assistance for Public Participation
<b>TPH</b>	Total Petroleum Hydrocarbons
<b>UDLP</b>	United Defense Limited Partnership
<b>ug/l</b>	microgram per liter
<b>USACE</b>	United States Army Corps of Engineers
<b>USACHPPM</b>	United States Army Center for Health Promotion and Preventive Medicine (formerly USAEHA)
<b>USAEC</b>	United States Army Environmental Center
<b>USAEHA</b>	United States Army Environmental Hygiene Agency (now USACHPPM)
<b>USATHMA</b>	United States Army Toxic and Hazardous Material Agency (now USAEC)
<b>UST</b>	Underground Storage Tank
<b>VOC</b>	Volatile Organic Compounds
<b>yr</b>	year

### ***INSTALLATION LOCALE:***

Construction of Camp Carson began in 1942, shortly after the bombing of Pearl Harbor. The installation was known originally as Camp Carson (named after the frontier hero, General “Kit” Carson), and served primarily as a training facility for more than 100,000 soldiers during World War II. The 71st, 89th, and 104th Infantry Divisions trained at the installation. The Camp was also the site of the Mountain Training Center, the Army Nurse Corps Training Center, and an internment camp for 9,000 German and Italian prisoners of war.

In 1946, the War Department declared Camp Carson a permanent military post. Activities at the Camp were greatly reduced, and only 600 personnel remained at the site. During the 1950s, the mission of Camp Carson continued to be basic and advanced training for combat-ready troops. Reserve and National Guard units were located on site during the Korean Conflict, and Camp Carson served as a separation center where more than 100,000 soldiers were processed between 1951 and 1953. In 1954, the name of the installation was officially changed from Camp Carson to Fort Carson.

### ***INSTALLATION MISSION:***

The primary mission of Fort Carson is the training and readiness of all assigned and attached troops to ensure combat-ready forces. Fort Carson also serves several off-post satellite units and activities in its geographical area of responsibility. The U.S. Air Force Academy, Cheyenne Mountain Air Station, Peterson AFB, and 58 Reserve components in nine states also utilize Fort Carson administrative, training, logistical, and other services.

### ***COMMAND ORGANIZATION:***

**Major Command:** Installation Management Agency (IMA)

**Installation:** Headquarters 7th Infantry Division and Fort Carson

### ***REGULATOR PARTICIPATION:***

**Federal:** U.S. Environmental Protection Agency (EPA), Region VIII, Federal Facilities Branch

**State:** Colorado Department of Public Health and Environment (CDPHE) and

### ***RCRA STATUS:***

- Large Quantity Generator
- RCRA Part B Permit effective Oct. 29, 1995 #CO2210020150
- Interim Subpart X Permit (Under Negotiation)

Fort Carson is RCRA regulated via RCRA Part B Permit (#CO2210020150, effective October 29, 1995 and expires in 2005). As of the date of this IAP, CDPHE is currently renewing the RCRA Part B Permit renewal application.

***RAB/TRC/TAPP STATUS:*** RAB formed in 1994. Currently active.

***HISTORIC ACTIVITY:*** Construction of Camp Carson began in 1942, shortly after the bombing of Pearl Harbor. The installation was known originally as Camp Carson (named after the frontier hero, General “Kit” Carson), and served primarily as a training facility for more than 100,000 soldiers during World War II. The 71st, 89th, and 104th Infantry Divisions trained at the installation. The Camp was also the site of the Mountain Training Center, the Army Nurse Corps Training Center, and an internment camp for 9,000 German and Italian prisoners of war.

In 1946, the War Department declared Camp Carson a permanent military post. Activities at the Camp were greatly reduced, and only 600 personnel remained at the site. During the 1950s, the mission of Camp Carson continued to be basic and advanced training for combat-ready troops. Reserve and National Guard units were located on site during the Korean Conflict, and Camp Carson served as a separation center where more than 100,000 soldiers were processed between 1951 and 1953. In 1954, the name of the installation was officially changed from Camp Carson to Fort Carson.

In 1961, Fort Carson was selected as the site for a new army training center, but the center was phased out after 1 year. The 5th Infantry Division (Mechanized) was activated and stationed at Fort Carson between 1962 and 1964.

In 1965, approximately 78,500 acres were acquired, increasing the size of the installation to 137,403 acres. Fort Carson was now large enough to support and train an entire division. Concurrently, military strength at Fort Carson was increased from 10,000 to 25,000 troops between 1965 and 1967 with the escalation of the Vietnam conflict. In July and August of 1965, two floods occurred in the region that caused major damage to the area and the installation. The first flood resulted in the loss of several lives and \$100 million in damage to the region, and the second flood caused \$160,000 in damages at the installation.

Throughout the 1970s, the mission of Fort Carson continued to be the maintenance and training of combat-ready troops. The 4th Infantry Division (Mechanized), also known as the “Iron Horsemen,” was redeployed to Fort Carson from Vietnam. During 1995, Fort Carson became the home of the 10th Special Forces Group and the 3rd Armored Cavalry Regiment in addition to the 43rd Support Group. Two brigades of the 4th Infantry Division along with the Division Headquarters were moved to Fort Hood, TX. The 3rd Brigade remained at Fort Carson. As of 1995, operations at Fort Carson were carried out by approximately 20,000 personnel.

The principal industrial operations at Fort Carson have been the repair and maintenance of vehicles and aircraft. The Consolidated Maintenance Facility (Bldg. 8000) performs specialized repair of tactical and heavy construction and engineering equipment. Vehicle maintenance, at all unit motor pools, includes routine oil changes, lubes, washdowns, and refueling.

On June 4, 1999, the 7th Infantry Division was activated at Fort Carson as an Integrated Division (composed of an Active Component and Army National Guard Units). With its headquarters at Fort Carson, the Division consists of the 39th Infantry Brigade (Arkansas), the 41st Infantry Brigade (Oregon), and the 45th Infantry Brigade (Oklahoma). The Division was originally activated on December 10, 1917.



## ***RESTORATION PROGRAM SUMMARY:***

### **Contaminants of Concern:**

Organics (solvents, petroleum hydrocarbons, etc.), Explosives (TNT, RDX), Inorganics

### **Media of Concern:**

Soil, Groundwater, Surface Water, Sediment, Indoor Air

**Estimated date for RIP/RC:** 2014

**Funding to Date:** \$ 20,110,688

**CTC (Including FY06):** \$ 23,041,000

## ***RESTORATION PROGRAM PROGRESS:***

Sites granted NFA by permit: 64

Sites granted NFA by process: 1

To date, a total of five Compliance Orders have been issued to Fort Carson by the CDPHE. The Compliance Orders are dated April 29, 1988, November 18, 1994, March 10, 1997, July 30, 1998 and March 22, 2002, and include violations related to specific SWMUs, as well as general Part B Permit non-compliance concerns. Currently, both the 1997 and 2002 orders are open.

# FORT CARSON

## RESTORATION PROGRAM

**STATUS:** Fort Carson is a Non-NPL installation with a RCRA Part B Permit (#CO2210020150, effective October 29, 1995 and expires in 2005) and Subpart X Permit interim status.

**AEDB-R SITES/SITES RC:** 78/58

**AEDB-R SITE TYPES (includes all sites, before and after RC):**

3 Burn Areas	1 Fire/Crash Training Area
5 Contaminated Fill	2 Contaminated Groundwater
1 Contaminated Sediments	4 Surface Disposal Areas
1 Drainage Ditch	3 Disposal Pit/Dry Wells
1 Dip Tank	1 Industrial Discharge
4 Incinerators	12 Landfills
2 Washracks	4 Storage Areas
3 Surface Impoundment/Lagoons	7 Soil Contamination After Tank Removal
3 Spill Site Areas	1 Above Ground Storage Tank
1 Underground Tank Farm	15 Underground Storage Tanks
2 Water Treatment Plants	1 Explosive Ordnance Disposal Area
1 Unexploded Munitions/Ordnance	

**CONTAMINANTS OF CONCERN:** Organics (solvents, petroleum hydrocarbons, etc.), Explosives (TNT, RDX, etc.), Inorganics

**MEDIA OF CONCERN:** Soil, Groundwater, Surface Water, Sediment, Indoor Air

**COMPLETED REM/IRA/RA:**

- FTC-009, Landfill 5 (1946-1956), evapo-transpiration cap, 2000
  - FTC-010, Landfill 6 (1942-1945), waste removal, 2000
  - FTC-018, Range 1A, burn trench removal, 2001
  - FTC-019, Sludge Trench Pit, pit removal, 2001
  - FTC-020, Grit/Oil Pit, source removal, 2005
- (See Remediation Activities for complete list.)

**IDENTIFIED POSSIBLE REM/IRA/RA:** CMI(C) at SWMU 2,8, 3, 24, 53, 55-111

**TOTAL ERA FUNDING:**

PRIOR YEAR:	\$ 20,110,688
CURRENT REQUIREMENTS (FY06):	\$ 3,774,000
FUTURE REQUIREMENTS:	\$ 19,267,000
TOTAL:	\$ 43,151,688

**DURATION OF IRP:**

YEAR OF IRP INCEPTION:	1994
YEAR OF RC COMPLETION:	2014
YEAR OF IRP COMPLETION:	2034

## IRP Contamination Assessment

Fort Carson's principal industrial operation has been the repair and maintenance of vehicles, aircraft, and equipment. Approximately twenty maintenance facilities (motor pools) have been constructed throughout Fort Carson, including the Consolidated Maintenance Facility at Building 8000, which performs specialized repair of tactical and heavy construction and engineering equipment and vehicles. In addition, since the 1960s, more than 300 underground and above ground storage tanks have been installed throughout Fort Carson to store a variety of fuels (gasoline, JP-4, JP-8, kerosene, diesel), and used/waste oils. To date, over 150 individual USTs have been removed and 36 have been upgraded to comply with 1998 state and EPA standards. Investigations of these facilities in July 1992 detected low levels of PCE, TCE, TCA, heavy metals, petroleum hydrocarbons, and several other substances in the soil and groundwater at some sites. Results of the investigations prompted the implementation of an installation-wide groundwater-monitoring program.

In May 1994, the EPA completed a RCRA facility assessment (RFA) of Fort Carson. The CDPHE augmented the RFA in September 1994, and in October 1995, based on sites identified in the RFA, issued Fort Carson a RCRA Hazardous Waste Part B Permit designating the Solid Waste Management Units (SWMUs) listed in this IAP. The FTC numbers also listed in this IAP were designated in the U.S. Army Environmental Hygiene Agency (USAEHA) *Interim Final Report, Hazardous Waste Consultation No. 37-26-0185-89, Evaluation of Solid Waste Management Units, Fort Carson, Colorado Springs, Colorado* (1988).

The RCRA Part B Permit identifies several potential landfill sites that were primarily used for sanitary and construction debris, OB/OD units, a fire training area, battery acid neutralization shops, several vehicle wash rack drainage areas, and several additional areas listed in the respective site description sections. The most widespread contaminants of concern are petroleum related contaminants (POL), metals, inorganics, and volatile organic compounds (VOCs) including, but not limited to, BTEX, TCE, PCE, TCA, and DCE. Limited amounts of contamination other than POL and solvents have been discovered to date. Several sites have been found to have groundwater contamination above regulatory limits. Based on the results of the ongoing groundwater-monitoring program, there are no known hazardous constituents migrating off or onto the installation.

The current AEDB-R database for the Fort Carson installation contains information on 78 sites. The database numbering system does not accurately reflect the number of physical sites because several AEDB-R numbers refer to multiple site locations. For example, FTC-023 includes 56 locations of former used/waste oil underground storage tanks (USTs). More detailed information about each of the sites is presented in the respective site description sections.

In accordance with the Part B Permit requirements, known or suspected constituents of concern identified for each SWMU in the permit were and are currently being addressed. Contaminants of concern identified above regulatory or risk-based screening criteria during the RFI process are listed in the "STATUS" box for each SWMU.

## *CLEANUP STRATEGY TO DATE:*

### Status of RFI phase--

Sites RFI fieldwork completed at: 53

### RFI Work Plans--

Awaiting Implementation: 6

In Preparation: 10

To be Prepared: 3

### RFI Reports:

Approved: 34

In Preparation: 19

To be Prepared: 18

### Status of CMS phase--

CMSs imposed: 6

All work plan preparation for these sites will be initiated in late FY05.

### Sites awaiting NFA petition and risk assessment: 21

These sites will begin the risk assessment process upon approval of all Risk Modules, which is anticipated in late FY05.

### Sites that have achieved NFA pending formal permit modification: 1

Our Strategy is a mixture of using available funding to address Fort Carson Corrective Actions as outlined in the permit.

# IRP Contamination Assessment

## *Previous Studies*

### **1992**

- FTC-033, SWMU 53, Building 8000, Pre-Design Study Report UST Sites, 1992 June
- FTC-033, SWMU 53, UST Sites, Remedial Design, 1992
- FTC-033, SWMU 53, Building 8000, Two-26,000 Gallon Used Oil Tanks, 1992

### **1993**

- Module I, Background Soil, Final , Site Specific Safety, Health & Emergency Response Plan for Sludge Pit Excavation, 1993 January
- FTC-079, SWMU 18, Final, Site Specific Safety, Health and Emergency Response Plan for Sludge Pit Excavation, 1993 January
- FTC-033, SWMU 53, Supplemental Site Investigation Report, UST Sites, 1993 February
- Multiple, -, Multiple USTs (1994), Final A-E, Chemical Data Acquisition Plan/Work Plan for Site Assessment on Multiple USTs, 1993 March

### **1994**

- Final, RCRA Facility Assessment for Fort Carson, 1994
- FTC-020, SWMU 13, Final, Site Safety and Health Plan, Grit/Oil Pit, 1994 March
- Final, Site Safety and Health Plan, Site Assessment on Multiple USTs, 1994 March
- FTC-020, SWMU 13, Grit/Oil Pit, Final A-E, Work Plan, 1994 March
- Final A-E, Chemical Data Acquis. Plan/Work Plan for Site Assess. on Multiple USTs, 1994 March
- FTC-020, SWMU 13, Design Concept Submittal, 1994 June
- FTC-020, SWMU 13, Pre-Final, Design Analysis Report, 1994 July
- FTC-020, SWMU 13, Final, Design Submittal, Vol. I: Design Analysis Report, 1994 August
- FTC-020, SWMU 13, Final, Design Submittal, Vol. II: Specifics & Bid Schedule, 1994 August
- FTC-020, SWMU 13, Final, Design Submittal, Vol.III: Cost Estimates and Construction Schedule, 1994 August
- FTC-020, SWMU 13, Final, Submittal Grit/Oil Pit Voluntary Corrective Action, 1994 August
- FTC-08, 24, 32, SWMUs 44, 4, 50, 34, 27, Group A, Final, Sampling & Analysis Plan for Group A, 1994 August
- Final, Analytical Data Package Vol. I-4, for Site Assessment on Multiple USTs, 1994 September
- Site Assessment Report for Multiple USTs, 1994 October
- Programmatic Site Safety & Health Plan For Voluntary Site Assessment Health-Based Risk Assessment & Remedial Design, Multiple Sites, 1994 October
- FTC-021/22, SWMU 24, Draft Final, Rev. 1, Sampling and Analysis Plan/Site Safety and Health Plan, Former Fire Training Area, 1994 November
- FTC-073, SWMU 26, Final, Sampling and Analysis Plan and Site Specific Health and Safety Plan For Equalization Basin, 1994 November
- Groundwater Development Photograph Log for Multiple USTs, 1994 November
-

## *Previous Studies*

### **1994 (Cont'd)**

- FTC-08, 24, 32, SWMUs 44, 4, 50, 34, 27, Final, Sampling and Analysis Plan for Group A Sites, 1994 November
- FTC-018, 19, 27, 48, SWMUs 46, 47, 48, 31, Group B, , Sampling and Analysis Plan for Group B Sites (Delivery Order Specific), 1994 November
- FTC-018, 19, 27, 48, SWMUs 46, 47, 48, 31, Final, Sampling and Analysis and Site Specific Health & Safety Plan for Group B Sites, 1994 November
- FTC-06, SWMU 2, Landfill 2, Remedial Design Landfills 2,5, & 6 and Vapor Degreaser (Rev. 1) (Delivery Order Specific), 1994 December
- FTC-021/22, SWMU 24, Site Safety and Health Plan, Former Fire Training Area, 1994 December
- Site Safety and Health Plan, Voluntary Site Investigation and Health-Based Risk Assessment, Multiple sites 1994 December

### **1995**

- Final, Site Assessment Report for Multiple USTs, 1995 February
- Fort Carson Restoration Advisory Guidebook, 1995 February
- FTC-073, SWMU 26, Equalization Basin, Draft, Addendum No. 1 to Final Sampling and Analysis Plan for Equalization Basin, 1995 February
- FTC-018, 19, 27, 48, SWMUs 46, 47, 48, 31, Final, Analytical Data Package for Site Investigation at Group B Sites, 1995 March
- FTC-018, 19, 27, 48, SWMUs 46, 47, 48, 31, Final, QCSR for Site investigations at Group B Sites, 1995 April
- FTC-018, 19, 27, 48, SWMUs 46, 47, 48, 31, Site Investigation at Group B Sites, 1995 April
- FTC-018, 19, 27, 48, SWMUs 46, 47, 48, 31, Final, Analytical Data Package for Site Investigation at Group B Sites, 1995 March
- FTC-08, 24, 32, SWMUs 44, 4, 50, 34, 27, Final, Analytical Data Package for Site Investigation at Group A Sites, 1995 June
- Executive Summary & Rev. Table of Contents for Final Site Assessment Rep. for Multiple USTs, 1995 June
- FTC-073, SWMU 26, Final, Analytical Data Package for RFI, Equalization Basin, 1995 July
- FTC-06, SWMU 2, Analytical Data Package for RFI at Landfills 2, 5 & 6 and Vapor Degreaser Site at Building 8000 -Volume 1 & 2, 1995 July
- FTC-08, 24, 32, SWMUs 44, 4, 50, 34, 27, RFIs at Group A Sites: Landfill 4, DRMO Hazardous Waste Storage Area, Vehicle Wash Rack Drainage, 1995 September
- FLPM, Working Draft, Field and Laboratory Procedures Manual for Fort Carson Army Installation, 1995 September
- FTC-058, SWMU 16, Vapor Degreaser, Design Analysis for Former Vapor Degreaser and Soil Vapor Extraction System, 1995 October
- FTC-073, SWMU 26, QCSR, Equalization Basin, 1995 October
- FTC-06, SWMU 2, Final Report, Ft. Carson Landfill Survey (Subcontract Geo Centers), 1995 November
- FTC-020, SWMU 13, Final Rev. 2, RFI Work Plan, 1995 November

# IRP Contamination Assessment

## *Previous Studies*

### **1995 (Cont'd)**

- FTC-06, SWMU 2, Revised, Conceptual (30%) Design Engineering Design Analysis Landfill 2, 1995 November
- FTC-010, SWMU 6, Final, RFI Work Plan Addendum for Landfill 6, 1995 November
- FTC-020, SWMU 13, Site Safety and Health Plan, Grit/Oil Pit, 1995 November
- FTC-020, SWMU 13, Rev. 2, Site-Specific Safety and Health Plan, Grit/Oil Pit, 1995 December

### **1996**

- Module I, Background Soil, Draft Final, RFI Work Plan, Battery Acid Neutralization Shops, Building 8000, Building 8030, Building 8142 (inclusive of background soil sampling), 1996 January
- FTC-08, 24, 32, SWMUs 44, 4, 50, 34, 27, RFI Report and Baseline Human Health Risk Assessment for Group A Sites, 1996 January
- FTC-014, SWMU 10, Landfill 10, Draft Final, RFI Work Plan, Landfill 10, 1996 January
- FTC-041, SWMU 54, Former Long Term Haz. Waste Storage Area (Building 8000), Draft Final, RFI Work Plan (FEC Document), 1996 January
- FTC-06, 9, 10, SWMUs 2, 5, 6, Site Specific Safety & Health Plan Landfills 2, 5, 6 Cap Installation Program, 1996 January
- FTC-045A, 45B, 45C, SWMUs 29, 28, 30, , Draft Final, RFI Specific Site and Safety Health Plan Battery Acid Neutralization Shops, Bldgs. 8030, 8000, 8142, 1996 January
- Rev. 2, Program Site Safety & Health Plan for RFI Remedial Design Activity, Multiple, 1996 February
- Contractor Programmatic Site Safety & Health Plan for RFI Remedial Design Activities, Multiple Sites, 1996 February
- FTC-010, SWMU 6, Final, Design Analysis; Landfill 6, 1996 March
- Fort Carson Community Involvement Plan, 1996 May
- FTC-010, SWMU 6, Construction Specifications Landfill 6, 1996 March
- Final, Field and Laboratory Procedures Manual for Fort Carson Army Installation (Rev. 0), 1996 March
- FTC-013, SWMU 9, Landfill 9, Draft Final, RFI Work Plan, Landfill 9, 1996 April
- FTC-074, SWMU 35, New Central Wash Rack, Draft Final, RFI Work Plan, New Central Wash Rack, 1996 April
- FTC-011, SWMU 7, Draft Final, RFI Work Plan, Landfill 7, 1996 April
- FTC-042, SWMU 22, Original Sewage Treatment Plant, , RFI Work Plan, 1996 April
- Final, Sampling Plans for Quarterly Groundwater Monitoring Program - 1996, 1996 April
- FTC-09, SWMU 5, Final, Design Analysis; Landfill 5, 1996 April
- FTC-039, SWMU 23, Final, RFI Work Plan Addendum for Sewage Treatment Lagoons, 1996 April
- FTC-031, SWMU 21, Draft Final, RFI Work Plan IWWTP (FEC Document), 1996 April



- *Previous Studies*

## 1996 (Cont'd)

- FTC-09, SWMU 5, Landfill 5 Construction Specifications, 1996 April
- FTC-075, SWMU 36, Old Central Wash Rack, Draft Final, RFI Work Plan, Old Central Wash Rack, 1996 April
- Final, Field and Laboratory Procedures Manual for Fort Carson Army Installation, 1996 May
- FTC-06, SWMU 2, Final, Design Analysis; Landfill 2, 1996 May
- FTC-06, SWMU 2, Construction Specifications Landfill 2, 1996 May
- Quarterly Groundwater Monitoring Procedures Manual / Site Specific Health and Safety Plan, 1996 May
- FTC-020, SWMU 13, Analytical Data Package, 1996 May
- FTC-020, SWMU 13, Draft Final, RFI Report, Grit/Oil Pit, 1996 June
- FTC-021,22, SWMU 24, Analytical Data Package - Volume I & II, 1996 June
- FTC-016, SWMU 12, Landfill 12, , NFA Request Landfill 12, 1996 June
- FTC-023, SWMUs 55-111, Final, No Further Action Request for SWMU's 93, 94, 95, and 97 through 106, Former Used/Waste Oil Above Ground Storage Tanks, 1996 July
- Final, Analytical Data Packages, Quarterly Groundwater Monitoring Program 1996, 1996 July
- FTC-047, SWMU 19, Land Spreading Field, Draft Final, RFI Work Plan , 1996 July
- FTC-076, SWMU 163, Industrial Wastewater Treatment System, Draft Final, RFI Work Plan for Fort Carson Sewer Systems, 1996 July
- FTC-034,36, SWMU 33,32, Golf Course Sludge Spreading Area and Golf Course Sewage Spreading Area, Draft Final, RFI Work Plan Golf Course Sewage Treatment Plant Effluent and Sludge Spreading Area (FEC), 1996 July
- FTC-033, SWMU 53, Draft Final, RFI Work Plan, Building 8000, Former Waste Oil/Solvent USTs, 1996 July
- FTC-079, SWMU 18, Draft Final, RFI Work Plan, 1996 July
- FTC-021,22, SWMU 24, QCSR, 1996 August
- FTC-020, SWMU 13, Rev. 1, QCSR, 1996 August
- FTC-06, SWMU 2, Analytical Data Package for Landfills 2, 5, & 6 (for samples collected June,1995 to May 1996), 1996 September
- FTC-058, SWMU 16, Analytical Data Package - Former Vapor Degreaser, 1996 October
- FTC-06, SWMU 2, QCSR - Landfills 2,5, & 6, 1996 October
- FTC-018, 19, 27, 48, SWMUs 46, 47, 48, 31, Draft Final, Voluntary Site Investigation and Risk Assessment Report for Group B Sites, 1996 October
- FTC-08, 24, 32, SWMUs 44, 4, 50, 34, 27, Draft Final, Voluntary Site Inv. and Risk Assessment Report for Group A Sites, 1996 October
- Final, RFI Work Plan on Multiple USTs, 1996 October
- FTC-033, SWMU 53, Letter Work Plan for Fort Carson, Building 8000, 1996 November
- FTC-06, SWMU 2, Draft Final, Cap Installation Work Plan Landfills 5&6, 1996 December

## *Previous Studies*

### **1996 (Cont'd)**

- FTC-09, SWMU 5, Draft Final, Cap Installation Work Plan Landfills 5 & 6, 1996 December
- Final, Sampling Plans for Quarterly Groundwater Monitoring Program - 1997, 1996 December
- Final, Quarterly Groundwater Monitoring Program, 1996 -- All on one CD,

### **1997**

- FTC-076, SWMU 163, Final Letter, Work Plan for Fort Carson Sewer System, 1997 January
- FTC-083, SWMU 167, North Specker Avenue/ Bldg. 749, Final, Voluntary Site Assessment Work FTC-083, SWMU 167, Plan for Building 749-West Drainage Ditch, 1997 January
- FTC-083, SWMU 167, Rationale for Additional Groundwater Sampling Activities, Building 749 - West Drainage Ditch, 1997 February
- FTC-083, SWMU 167, Additional Direct Push Groundwater Sampling Activities, Building 749 - West Drainage Ditch, 1997 March
- Final, Field and Laboratory Procedures Manual for Fort Carson Army Installation, 1997 March
- Final, Field and Laboratory Procedures Manual for Fort Carson Army Installation, 1997 April
- FTC-083, SWMU 167, Possible Monitoring Well Locations for Foothills Engineering Consultants Activities, 1997 April
- Final, Analytical Data Packages, Quarterly Groundwater Monitoring Program 1997, 1997 April
- FTC-083, SWMU 167, Final, Newly Identified SWMU Report, 1997 May
- FTC-020, SWMU 13, Draft Final, RFI Work Plan Addendum, Grit/Oil Pit, 1997 May
- FTC-09, SWMU 5, Construction Activities at Landfills 5 and 6 (Stormwater Pollution Prevention Plan), 1997 June
- FTC-015, SWMU 11, Landfill 11, Draft Final, RFI Work Plan, Landfill 11, 1997 July
- Multiple, Multiple, Relative Risk Evaluation, Letter, Report For Relative Risk Groundwater Sampling at Selected Sites completed During September 1996, 1997 July
- FTC-05, SWMU 1, Final, Hydrogeologic Study, 1997 July
- FTC-09, SWMU 5, Draft Final, Gradefill Work Plan for Landfills 5 & 6, 1997 July
- FTC-073, SWMU 26, Final, Conceptual Removal Plan, Equalization Basin, 1997 August
- FTC-09, SWMU 5, Preconstruction Survey Report, Landfill 5, 1997 August
- Final, Quarterly Groundwater Monitoring Program, 1996, First Quarter, Vol 1, 1997 September

### **1998**

- FTC-09, SWMU 5, Additional ET Cap Modeling Landfills 5 & 6, 1998 January
- FTC-05, SWMU 1, Final, Quarterly Site Specific Monitoring Program, 3rd Quarter 1997, 1998 January
- FTC-06, SWMU 2, Draft Final, Gradefill Work Plan Landfill 2, 1998 January

# IRP Contamination Assessment

## *Previous Studies*

### **1998 (Cont'd)**

- Multiple, Multiple, Quarterly Groundwater Monitoring Program, Final - Rev 01,
- Final, Sampling Plans for Quarterly Groundwater Monitoring Program - 1998, 1998 January
- FTC-016, SWMU 12, Draft Final, RFI Report, Landfill 12, 1998 January
- FTC-06, SWMU 2, Revised Final, Sampling and Analysis Plan for Remedial Design for Landfills 2,3,5, and 6 and Vapor Degreaser, 1998 January
- FTC-033, SWMU 53, Draft Final, Rev. 1, RFI Work Plan, Building 8000, Former Waste Oil/Solvent USTs, 1998 January
- FTC-073, SWMU 26, Letter Work Plan for Additional Basin Sludge Sampling, Equalization Basin, 1998 February
- FTC-05, SWMU 1, Final, Quarterly Site Specific Monitoring Program, 4th Quarter 1997, Final, 1998 March
- FTC-073, SWMU 26, Letter Work Plan Addendum for Sludge Removal, Equalization Basin, 1998 April
- Final, Programmatic Construction Quality Assurance/ Quality Control Plan, Multiple sites, 1998 April
- FTC-020, SWMU 13, Analytical Data Package - Volume 2, 1998 May
- FTC-06, SWMU 2, Gas Probe Monitoring Results for Landfills 2,5,& 6 (April-June, 1998), 1998 June
- FTC-083, SWMU 167, Results of Soil-Gas Pilot Test and Letter Work Plan for Additional Investigation Activities at North Specker Avenue, 1998 June
- FTC-023, SWMUs 55-111, Final , RFI Work Plan, Former Used/Waste Oil Tanks - 11 Site, 1998 June
- Final, Quarterly Groundwater Monitoring Program, 1996, Second Quarter, Vol 2, 1998 June
- FTC-023, SWMUs 55-111, Draft Final, Rev. 1, RFI Work Plan, Former Used/Waste Oil Tanks and Oil/Water Separators- 33 Site, 1998 July
- Final, Quarterly Groundwater Monitoring Program, 1996, Third Quarter, Vol 3, 1998 September
- FTC-045A, 45B, 45C, SWMUs 28, 29, 30, Buildings 8030, 8000, 8142 Battery Acid Neutralization Shops, Final, Work Plan, Battery Acid Neutralization Shops, 1998 September
- FTC-073, SWMU 26, Final, Analytical Data Package Addendum, Equalization Basin Vol. II , 1998 October
- FTC-033, SWMU 53, Final, RFI Summary and Letter Work Plan Addendum, Building 8000, 1998 October
- FTC-016, SWMU 12, Final, RFI Work Plan, Landfill 12 (ECC), 1998 October
- FTC-05, SWMU 1, Final, Quarterly Site Specific Monitoring Program, 2nd Quarter 1998, Final, 1998 November

### **1999**

- Final, Sampling Plans for Quarterly Groundwater Monitoring Program - 1999 Qrts 1 & 3, 1999 January

# IRP Contamination Assessment

## *Previous Studies*

### **1999 (Cont'd)**

- FTC-05, SWMU 1, Final, Quarterly Site Specific Monitoring Program, 3rd Quarter 1998 , 1999 February
- FTC-043, SWMU 51, DIO, Draft Final Rev. 01, RFI Work Plan for DIO Hazardous Waste Storage Area, 1999 February
- FTC-09, SWMU 5, Draft Final, Motor Pool Cap Work Plan, Landfill 5, 1999 February
- Final, Quarterly Groundwater Monitoring Program, 1996, Fourth Quarter, Vol 4, 1999 March
- FTC-09, SWMU 5, Draft Final, ET Cap Work Plan Landfills 5&6, 1999 March
- FTC-017, SWMU 45, Final, RFI Report, Range 1, Open Burn Grounds (ECC), 1999 May
- FTC-09, SWMU 5, Final , Design Analysis for Landfill 5, Motor Pool Cap (HLA), 1999 June
- Final, Analytical Data Packages, Quarterly Groundwater Monitoring Program 1999, 1999 June
- FTC-08, 24, 32, SWMUs 44, 4, 50, 34, 27, Draft Final, RFI for Group A Sites, 1999 June
- Final, Letter Work Plan for Investigating Bldgs. 1860, 6290, 8300, 1882, 1515, 9648, 1999
- FTC-09, SWMU 5, Final , Motor Pool Cap Work Plan, Landfill 5, 1999 June
- FTC-023, SWMUs 55-111, Draft Final, Phase I RFI Report, Former Used/Waste Oil Tanks - 11 Site, 1999 July
- FTC-023, SWMUs 55-111, Draft Final, QCSR, Phase I RFI Former Used/Waste Oil Tanks - 11 Site, 1999 July
- FTC-033, SWMU 53, Letter Work Plan Addendum for Northern Manholes, Building 8000, 1999 July
- Final Letter, Work Plan for Subsurface Investigations at Heating Oil Plants, Buildings 1860 & 6290, 1999 August
- FTC-05, SWMU 1, Final, Quarterly Site Specific Monitoring Program, 4th Quarter 1998 , 1999 August
- FTC-05, SWMU 1, Final, Quarterly Site Specific Monitoring Program, 1st Quarter 1999, 1999 August
- FTC-05, SWMU 1, Draft Final, Gradefill Work Plan Landfill 1 Drainage Channel, 1999 August
- Site Specific Safety & Health Plan, Petroleum Hydrocarbon Site Drilling & Remediation, Multiple Sites, 1999 Aug
- FTC-021,22, SWMU 24, Draft Final, RFI Report, 1999 August
- FTC-023, SWMUs 55-111, Draft Final, Letter Work Plan Addendum, Former Used/Waste Oil Tanks and Oil/Water Separators - 33 Site, Modification to Field
- FTC-018, 19, 27, 48, SWMUs 46, 47, 48, 31, Draft Final, RFI Report for Group B Sites, 1999 September
- Sampling for the Former Oil/Water Separator Discharge Locations, 1999 September
- FTC-020, SWMU 13, Draft Final, Rev. 1, Phase I CMS Work Plan , 1999 October

# IRP Contamination Assessment

## *Previous Studies*

### **1999 (Cont'd)**

- FTC-039, SWMU 23, Draft Final, RFI Report Sewage Treatment Lagoons, 1999 November
- FTC-076, SWMU 163, Draft Final, RFI Work Plan for Industrial Wastewater System, 1999 November
- FTC-083, SWMU 167, Draft, Site Close Report - Building 749, RFI on Numerous USTs, 1999 November
- FTC-021,22, SWMU 24, Draft Final, Oil/Water Separator Removal Work Plan Fire Training Area, 1999 November
- FTC-08, SWMU 4, Landfill 4, Draft Final Rev.1, RFI Work Plan, 1999 December

### **2000**

- Final, Sampling Plans for Quarterly Groundwater Monitoring Program - 2000, 2000 January
- FTC-014, SWMU 10, Draft Final, RFI Work Plan, Landfill 10, 2000 January
- FTC-05, SWMU 1, Final, Quarterly Site Specific Monitoring Program, 2nd Quarter 1999, 2000 January
- FTC-010, SWMU 6, Concept Design Landfill 6 Removal, 2000 February
- SWMU 110, Draft , Letter Work Plan Addendum for Former Used/Waste Oil Tanks - 33 Site, Re-sampling Associated With Quanterra Environmental Services Performance, 2000 March
- FTC-073, SWMU 26, Final, RFI Report, Equalization Basin, 2000 March
- FTC-09, SWMU 5, Draft Final, ET Cap Work Plan, Landfill #5, 2000 March
- FTC-09, SWMU 5, Final, Certification Report Landfill 5 Motor Pool Cap, 2000 March
- FTC-083, SWMU 167, Draft Final, SWMU 167 Summary report, North Specker Avenue Groundwater Plumes, 2000 March
- FTC-088, SWMU 169, UST Site Building 1211, Final, Letter Work Plan Addendum for Additional Subsurface Investigation , 2000 March
- Integrated Solid Waste Management Plan, 2000 March
- FTC-05, SWMU 1, Final, Quarterly Site Specific Monitoring Program, 3rd Quarter 1999, 2000 April
- FTC-020, SWMU 13, Analytical Data Package - Volume 3, 2000 April
- FTC-020, SWMU 13, Final, RFI Report, Grit/Oil Pit, 2000 May
- FTC-020, SWMU 13, Final, Letter Work Plan for Installing Additional Temporary Direct Push Wells Grit/Oil Pit and Landfill 1 CMS - Phase 1, 2000 May
- FTC-010, SWMU 6, Final, RFI Report Landfill 6, 2000 May
- FTC-05, SWMU 1, Draft Final, Construction and Debris Landfill Design and Operation Plan, 2000 June
- FTC-078, SWMU 166, Bldg. 8110 Former Wash Rack, Final, Letter Work Plan Subsurface Investigation, 2000 June
- FTC-039, SWMU 23, Draft Final, RFI Report Addendum Letter Report Sewage Treatment Lagoons, 2000 June
- FTC-020, SWMU 13, Final, QCSR - Addendum to RFI Report, 2000 June

# IRP Contamination Assessment

## *Previous Studies*

### **2000 (Cont'd)**

- SWMU 111, Final, Letter Work Plan, Subsurface Investigation - Building 8110, 2000 June
- FTC-077, SWMU 165, Bldg. 8110 Former Lime Pit, Final, Letter Work Plan Subsurface Investigation, 2000 June
- Module I, Background Soil, Final, Letter Work Plan for Supplemental Background Soil Sampling, 2000 June
- Final, Quality Control Summary Report RFI on Multiple UST (FEC Doc), 2000 July
- FTC-043, SWMU 51, Analytical Data Package, 2000 July
- FTC-042, SWMU 22, Analytical Data Package for Sewage Treatment Plant, 2000 July
- SWMUs 74, 75, Final, Letter Work Plan Addendum, Former Used/Waste Oil Tanks and Oil/Water Separators - Building 2840 and Building 2940, 2000 July
- SWMUs 72, 74, 89, 90, Final, Letter Work Plan Addendum - Former Used/Waste Oil Tanks and Oil/Water Separators - Building 2735, Building 2840, Building 9609, and Building 9620, 2000 July
- SWMUs 110, 72, Final, Letter Work Plan Addendum, Former Used/Waste Oil Tanks - Building 2427 and Building 2735, 2000 July
- SWMU 110, Final, Letter Work Addendum, Former Used/Waste Oil Tanks - Building 2427, 2000 July
- FTC-09, SWMU 5, Final, Construction Report Landfill 5 Motor Pool Cap, 2000 August
- FTC-058, SWMU 16, Draft Final, QCSR, 2000 August
- FTC-08, SWMU 4, Matcom<sup>TM</sup> Suitability Report (Harding Lawson), 2000 August
- FTC-033, SWMU 53, Draft Final, RFI Work Plan, Building 8001, Former Waste Oil/Solvent USTs, 2000 August
- Fort Carson Community Involvement Plan, 2000 August
- FTC-010, SWMU 6, Final, Waste Relocation Work Plan, Landfill 6, 2000 August
- FTC-083, SWMU 167, Final, Letter Work Plan for Additional Subsurface Investigation, 2000 September
- Final Letter, Work Plan for the Installation of Additional Soil Borings - Building 6290, 2000 September
- FTC-083, SWMU 167, Interim Report, Subsurface Investigation and Pilot Test Installation, 2000 November
- FTC-010, SWMU 6, Final, Work Plan for Utility Relocation Project Landfill 6 (HLA), 2000 November
- FTC-093, SWMU 168, POW Camp, Draft Final, Newly Identified SWMU Report - POW Camp, 2000 December
- FTC-08, SWMU 4, Draft Final Rev. 2, RFI Work Plan, 2000 December

### **2001**

- FTC-010, SWMU 6, Final, Overhead Electrical Power & Communication Lines Relocation Work Plan, 2001 January
- Final, Sampling Plans for Quarterly Groundwater Monitoring Program - 2001, 2001 January



# IRP Contamination Assessment

## *Previous Studies*

### **2001 (Cont'd)**

- FTC-083, SWMU 167, Revised Draft Final, Letter Work Plan for Interim Remedial Action, 2001 January
- FTC-027, SWMU 48, Range 123, 1995 data will be with Group B documents.,
- FTC-027, SWMU 48, Work Plan for Additional Soil Sampling, 2001 January
- FTC-09, SWMU 5, Final, Certification Report Landfill 5 ET Cap (HLA), 2001 February
- FTC-018, SWMU 46, Draft Final, Work Plan for Additional Soil Sampling, 2001 February
- FTC-040, SWMU 25, Draft Final, Work Plan for Additional Soil Sampling, 2001 February
- FTC-077, SWMU 165, Final, RFI Work Plan, 2001 February
- FTC-077, SWMU 165, Draft Final, RFI Work Plan, 2001 February
- FTC-058, SWMU 16, Draft Final, RFI Report, Vapor Degreaser, 2001 March
- Module II, Background Groundwater, Proposed Final Well Selection for Background Groundwater Data Set, 2001 March
- FTC-074, SWMU 35, Draft Final, No Further Action Request, 2001 March
- FTC-015, SWMU 11, Draft Rev. 2, RFI Work Plan, Landfill 11, 2001 March
- FTC-09, SWMU 5, Draft Final, RFI Report Landfill 5, 2001 March
- FTC-05, SWMU 1, Final, Quarterly Site Specific Monitoring Program, 2nd Quarter 2000 , 2001 March
- FTC-027, SWMU 48, Final Letter, Work Plan for Additional Soil Sampling Range 123, 2001 April
- FTC-076, SWMU 163, Draft Final, RFI Work Plan Industrial Waste Water System, 2001 April
- Final, Site Characterization Reports, Bldg. 1860 and Bldg. 6290, 2001 April
- FTC-088, SWMU 169, Draft Final, Newly Identified SWMU Report, 2001 April
- FTC-083, SWMU 167, Final, Letter Work Plan for Additional Subsurface Investigation, 2001 May
- FTC-044, SWMU 27, Draft Final, RFI Report Building 301 Drainage Ditch, 2001 May
- FTC-05, SWMU 1, Final, Quarterly Site Specific Monitoring Program, 3rd Quarter 2000, 2001 May
- FTC-021, 22, 23, 39, SWMUs 23, 24, 90, Butts East Combined Sites, Final, RFI Work Plan, BECS, 2001 May
- FTC-05, SWMU 1, Final, Quarterly Site Specific Monitoring Program, 1st Quarter 2001, 2001 March
- FTC-020, SWMU 13, Draft Final, Phase I CMS Report, Landfill 1 and Grit/Oil Pit, 2001 March
- FTC-031, SWMU 21, Industrial WWT Plant
- FTC-032, SWMU 34, Draft Final, RFI Report Vehicle Wash Rack Drainage Ditches, 2001 May
- FTC-043, SWMU 51, Draft Final, RFI Work Plan for Additional Surface Soil Sampling, 2001 June

# IRP Contamination Assessment

## *Previous Studies*

### **2001 (Cont'd)**

- FTC-020, SWMU 13, Draft Final, Phase II CMS Work Plan, Landfill 1 and Grit/Oil Pit, 2001 June
- SWMU 84, Draft Final, Letter Work Plan Addendum, Former Used/Waste Oil Tanks - Building 8300, 2001 June
- FTC-021,22, SWMU 24, Draft Final , Oil/Water Separator Removal Work Plan Fire Training Area, 2001 June
- FTC-076, SWMU 163, Draft Final, Rev. 1, RFI Work Plan Industrial Waste Water System, 2001 June
- FTC-079, SWMU 18, Draft Final, Removal Work Plan, 2001 June
- FTC-048, SWMU 31, Draft Final, RFI Report, Demolition Area, 2001 July
- Module II, Background Groundwater, Draft Final, Work Plan, Background Groundwater Data Set, 2001 July
- FTC-021,22, SWMU 24, Draft Final, Oil/Water Separator Removal Work Plan Addendum Fire Training Area, 2001 July
- FTC-024, SWMU 50, Final, RFI Report DRMO Hazardous Waste Storage Facility, 2001 July
- FTC-08, SWMU 4, Draft Final Rev. 1, RFI Report , 2001 July
- FTC-033, SWMU 53, Draft Final, Interim Corrective Measure Work Plan, Building 8000, 2001 July
- FTC-033, SWMU 53, Final, Interim Corrective Measure Work Plan, Building 8000, 2001 August
- FTC-09, SWMU 5, Final, Quarterly Site Specific Monitoring Program, 4th Quarter 2000, 2001 August
- FTC-020, SWMU 13, Final, Phase II CMS Work Plan, Landfill 1 and Grit/Oil Pit, 2001 August
- FTC-020, SWMU 13, Final, Phase I CMS Summary Report, Landfill 1 and Grit/Oil Pit, 2001 September
- FTC-017, SWMU 45, Final, Letter Work Plan Range 1, Open Burning Grounds, 2001 September
- FTC-017, SWMU 45, Draft Final, Conceptual Removal Plan, Range 1 Concrete Basin, 2001 September
- FTC-020, SWMU 13, Final, Phase II CMS Work Plan, Landfill 1 and Grit/Oil Pit, 2001 October
- FTC-020, SWMU 13, Final, Phase I CMS Summary Report, Landfill 1 and Grit/Oil Pit, 2001 October
- FTC-015, SWMU 11, Draft Final, RFI Report, Landfill 11, 2001 October
- Module II, Background Groundwater, Final, Work Plan, Background Groundwater Data Set, 2001 October
- FTC-047, SWMU 19, Draft Final, RFI Work Plan , 2001 November
- Module I, Background Soil, Draft Final, Evaluation of Background Soil Data for Fort Carson , 2001 November
- FTC-048, SWMU 31, Final, RFI Report, Demolition Area, 2001 November
- FTC-09, SWMU 5, Final, Construction Report Landfill 5 ET Cap, 2001 December



# IRP Contamination Assessment

## *Previous Studies*

### **2001 (Cont'd)**

- FTC-043, SWMU 51, Analytical Data Package Addendum, 2001 December
- FTC-021,22, SWMU 24, Final, Rev. 1, Oil/Water Separator Removal Work Plan Addendum Fire Training Area, 2001 December

### **2002**

- FTC-026, SWMU14, Pete's Hill Dump, All Documents now associated with Combined Landfill Area,
- FTC-026, SWMU14, Draft Final, RFI Work Plan, Pete's Hill Dump, 2002 January
- FTC-093, SWMU 168, Draft Final, QCSR/ADP, POW Camp, 2002 January
- FTC-093, SWMU 168, Draft Final, RFI Report, POW Camp, 2002 January
- FTC-045A, 45B, 45C, SWMUs 28, 29, 30, Final, QCSR, Battery Acid Neutralization Shops, 2002 January
- FTC-045A, 45B, 45C, SWMUs 28, 29, 30, Final, RFI Report, Battery Acid Neutralization Shops, 2002 January
- FTC-047, SWMU 19, Final Rev. 1, RFI Work Plan , 2002 January
- FTC-043, SWMU 51, Final, QCSR DIO Hazardous Waste Storage Area, 2002 January
- FTC-043, SWMU 51, Final, QCSR Addendum DIO Hazardous Waste Storage Area, 2002 January
- FTC-043, SWMU 51, Final, RCRA Facility Investigation Report DIO Hazardous Waste Storage Area, 2002 January
- FTC-09, SWMU 5, Final, Site Characterization Report Landfill 5 (HLA), 2002 February
- FTC-010, SWMU 6, Final, Certification Report Landfill 6 Waste Relocation, 2002 February
- FTC-09, SWMU 5, Draft Final, Landfill 5 ET Cap Annual Performance Monitoring Report for 2001, 2002 February
- FTC-09, SWMU 5, Final, ET Cap Work Plan, Landfill #5, 2002 March
- FTC-021, 22, 23, 39, SWMUs 23, 24, 90, Draft Final , RFI Work Plan Addendum, BECS, 2002 March
- FTC-020, SWMU 13, Draft Final, Pilot Soil Vapor Extraction Treatability Study Report, Grit/Oil Pit, 2002 March
- FTC-026, SWMU14, Draft Final, Rev. 1, RFI Work Plan, Pete's Hill Dump, 2002 April
- SWMU 84, Final, Former Used/Waste Oil Above Ground Storage Tank Legal Descriptions, 2002 April
- SWMU 84, Draft, Letter Work Plan Addendum, Former Used/Waste Oil Tanks - Building 8300 (Paragon Analytics Chiller Malfunction Resampling), 2002 April
- FTC-018, SWMU 46, Draft Final, Rev. 1, RFI Report, 2002 April
- FTC-018, SWMU 46, Final, QCSR Addendum, 2002 April
- Module III, Human Health RBCs, Draft Final, Development of Site Wide Risk Concentrations, 2002 April
- Module III, Human Health RBCs, Final, Development of Sitewide RBCs, 2002 April

# IRP Contamination Assessment

## *Previous Studies*

### **2002 (Cont'd)**

- FTC-079, SWMU 18, Draft Final, RFI Report, Sludge Trench Pit, 2002 May
- FTC-079, SWMU 18, Draft Final, Rev. 1, QCSR, 2002 May
- Module V, ECO, Draft Final, Ecological Reconnaissance of B Ditch, Clover Ditch, and Central Unnamed Ditch, 2002 May
- FTC-09, SWMU 5, Draft Final, 2nd Quarter 2001, Groundwater Sampling Results, Landfill 5, 2002 May
- FTC-012, SWMU 8, Final, RFI Work Plan, Landfill 8, 2002 May
- FTC-020, SWMU 13, Final, Pilot Soil Vapor Extraction Treatability Study Report, Grit/Oil Pit, 2002 June
- FTC-073, SWMU 26, Draft Final, Groundwater Monitoring Plan for Equalization Basin, 2002 June
- Module I, Background Soil, Draft Final, Risk Based Evaluation Procedures Manual Module 1, Background Soil, 2002 June
- Module II, Background Groundwater, Draft Final, Rev. 1, Sitewide Background Data set for Groundwater, 2002 July
- Module V, Draft, Proposed Methodology, Ecological Risk Assessment, 2002 July
- SWMU 84, Final, QCSR, Phase I RFI, Former Used/Waste Oil Tanks - 11 Site, 2002 July
- FTC-09, SWMU 5, Final, Quarterly Site Specific Monitoring Program, 1st Quarter 2001, 2002 July
- FTC-09, SWMU 5, Draft Final, CMS Work Plan Landfill 5, 2002 July
- FTC-05, SWMU 1, Final, Quarterly Site Specific Monitoring Program, 2nd Quarter 2001, 2002 August
- SWMU 84, Draft Final, RFI Addendum, Former Used/Waste Oil Tanks - Building 8300, 2002 August
- FTC-09, SWMU 5, Draft Final, Certification Report, Landfill 5, 2002 August
- FTC-083, SWMU 167, Draft Final, RFI Report, 2002 September
- FTC-083, SWMU 167, Draft Final, QCSR, 2002 September
- Module III, Human Health RBCs, Final, Rev. 1, Risk-Based Evaluation Procedures Manual, Module III, 2002 October
- FTC-058, SWMU 16, Final, RFI Report, Vapor Degreaser, 2002 October
- FTC-09, SWMU 5, Draft Final, Letter Work Plan for Landfill 5 Soil Gas Investigation, 2002 October
- FTC-09, SWMU 5, Draft Final, Quarterly Site Specific Monitoring Program, 2nd Quarter 2001 - 2nd Quarter 2002, 2002 November
- FTC-09, SWMU 5, Draft Final, CMS Work Plan Landfill 5, 2002 November
- FTC-05, SWMU 1, Draft Final, Quarterly Site Specific Monitoring Program, 3rd Quarter 2001, 2002 November
- FTC-05, SWMU 1, Draft Final, Conceptual Cap Design Landfill 1, 2002 November
- FTC-05, SWMU 1, Map, Landfill 1 ET Cap Conceptual Design, 2002 November
- FTC-093, SWMU 168, Draft Final, RFI Letter Work Plan Addendum, POW Camp, 2002 November

# IRP Contamination Assessment

## *Previous Studies*

### **2002 (Cont'd)**

- FTC-079, SWMU 18, Draft Final, Rev. 1, RFI Report, Sludge Trench Pit, 2002 December
- FTC-083, SWMU 167, Draft Final, Rev. 1, RFI Report, North Specker Avenue Groundwater Plumes, 2002 December
- FTC-05, SWMU 1, Draft Final, Quarterly Site Specific Monitoring Program, 4th Quarter 2001 - 2nd Quarter 2002, 2002 December
- FTC-09, SWMU 5, Draft Final, Quarterly Site Specific Monitoring Program, 3rd Quarter 2002, 2002 December

### **2003**

- FTC-05, SWMU 1, Draft Final, Quarterly Site Specific Monitoring Program, 3rd Quarter 2002, 2003 January
- FTC-08, SWMU 4, Draft Final Rev. 2, RFI Report , 2003 January
- FTC-079, SWMU 18, Final, QCSR, 2003 January
- FTC-08, SWMU 4, Draft Final, QCSR Addendum 2, 2003 January
- Module IV, Groundwater Protection Levels, Draft Final, Development of Groundwater Protection Module IV, Groundwater Protection Levels, Final, Rev. 1, Risk-Based Evaluation Procedures Manual, Module IV, Development of GPLs, 2003 January
- FTC-09, SWMU 5, Draft Final, Landfill 5 ET Cap Annual Performance Monitoring Report for 2002, 2003 February
- FTC-09, SWMU 5, Draft Final, Rev. 1, Landfill 5 Soil Gas Investigation Work Plan, 2003 March
- FTC-09, SWMU 5, Final, Construction Report Landfill 5 ET Cap, 2003 May
- Module III, Human Health RBCs, Final, Risk-Based Evaluation Procedures Manual, Module III, Sitewide RBCs, Approved, 2003 March
- FTC-020, SWMU 13, Interim Remedial Measure, Initial Summary Report (SVE system), Grit/Oil Pit, 2003 May
- FTC-020, SWMU 13, Draft Final, Interim Remedial Action, Source Removal Work Plan, Grit/Oil Pit, 2004 May
- FTC-041, SWMU 54, Draft Final, RFI Work Plan, 2003 May
- FTC-09, SWMU 5, Final, Certification Report Landfill 5 ET Cap (Harding ESE), 2003 May
- SWMU 61, Draft Final & Final, Phase I RFI Report, Former Used/Waste Oil Tank - Building 1515, 2003 May
- SWMU 83, Draft Final, Phase I RFI Report, Former Used/Waste Oil Tanks - Building 8200, 2003 May
- SWMU 85, Draft Final, Phase I RFI Report, Former Used/Waste Oil Tank - Building 8930, 2003 May
- SWMUs 75, 84, 110, Draft, QCSR Addendum, Former Used/Waste Oil Tanks - 11 Site, 2003 June
- SWMU 111, Final, Letter Work Plan Addendum, Former Used/Waste Oil Tanks - Building 8110, 2003 June

# IRP Contamination Assessment

## *Previous Studies*

### **2003 (Cont'd)**

- SWMU 67, Draft Final, Phase I RFI Report, Former Used/Waste Oil Tank - Building 2239, 2003 June
- SWMU 80, Draft Final, Phase I RFI Report, Former Used/Waste Oil Tank - Building 3874, 2003 June
- SWMU 82, Draft Final, Phase I RFI Report, Former Used/Waste Oil Tanks - Building 8152, 2003 June
- SWMU 81, Draft Final, Phase I RFI Report, Former Used/Waste Oil Tanks - Building 8142, 2003 June
- SWMU 110, Draft Final, Phase I RFI Report, Former Used/Waste Oil Tank - Building 2427, 2003 June
- FTC-09, SWMU 5, Final, Landfill 5 Soil Gas Investigation Work Plan, 2003 June
- FTC-09, SWMU 5, Final, Quarterly Site Specific Monitoring Program, 2nd Quarter 2001 - 2nd Quarter 2002, 2003 June
- FTC-027, SWMU 48, Draft Final, RFI Report and QCSR, 2003 June
- FTC-09, SWMU 5, Draft Final, Work Plan for Evapotranspiration Cap, Soil Investigation at Landfill 5, 2003 July
- FTC-05,11,20,26,79,100, SWMUs 1,7,13,14,18,170, Combined Landfill Area , Draft Final, Interim Closure Plan CLA, 2003 July
- FTC-05,11,20,26,79,100, SWMUs 1,7,13,14,18,170, Draft Final, RFI Work Plan CLA, 2003 July
- SWMU 75, Draft Final, Phase I RFI Report, Former Used/Waste Oil Tanks - Building 2940, 2003 July
- SWMU 84, Draft Final, Phase I RFI Report, Former Used/Waste Oil Tank - Building 8300, 2003 July
- SWMU 83, Final, Phase I RFI Report, Former Used/Waste Oil Tank - Building 8200, 2003 July
- SWMU 111, Draft Final, Phase I RFI Report, Former Used/Waste Oil Tank - Building 8110, 2003 July
- FTC-012, SWMU 8, Draft Final, RFI, Landfill 8, 2003 July
- FTC-09, SWMU 5, Draft Final, Groundwater and Soil Gas Monitoring Report 1st Quarter 2003 Landfill 5, 2003 August
- FTC-019, 40, SWMUs 40, 47, Combined Range 121 Open Detonation Grounds and Range 121 Open Dumping Area, Draft Final, Letter Work Plan for Monitoring Well Installation and Quarterly Groundwater Sampling, 2003 August
- FTC-09, SWMU 5, Draft Final, Rev. 1, Post-Construction Groundwater and Soil Gas Monitoring Plan Landfill 5, 2003 August
- FTC-09, SWMU 5, Final, Groundwater and Soil Gas Monitoring Report Third Quarter 2002, 2003 August
- FTC-083, SWMU 167, Final, Indoor Air Assessment Work Plan, 2003 August
- FTC-077, SWMU 165, Draft Final, RFI Work Plan Addendum, Former Lime Pit at Building 8110 (Weston), 2003 August
- FTC-077, SWMU 165, Draft Final, RFI Work Plan Addendum, Former Wash Rack at Building 8110 (Weston), 2003 August

# IRP Contamination Assessment

## *Previous Studies*

### **2003 (Cont'd)**

- FTC-09, SWMU 5, Draft Final, Initial Groundwater Investigation Work Plan Landfill 5, 2003 September
- FTC-09, SWMU 5, Final, Work Plan for ET Cap Soil Investigation at Landfill 5, 2003 September
- FTC-05,11,20,26,79,100, SWMUs 1,7,13,14,18,170,, Final, Interim Closure Plan CLA, 2003 September
- Module IV, Groundwater Protection Levels, Final, Rev. 2, Risk-Based Evaluation Procedures Manual, Module IV, Development of GPLs, 2003 September
- Module V, Draft Final, Rev. 1, Risk-Based Evaluation Procedures Manual, Module V, Ecological Module V, Risk Procedures Manual, 2003 September
- Module II, Background Groundwater, Final, Risk-Based Evaluation Procedures Manual, Module II, Sitewide Background Data Set for Groundwater, 2003 October
- Programmatic Site Safety and Health Plan for RFI and Remedial Design Activities, Multiple Sites, 2003 October
- Module IV, Groundwater Protection Levels, Final, Risk-Based Evaluation Procedures Manual, Module IV, Development of GPLs, 2003 October
- FTC-06, SWMU 2, Draft Final, RFI Work Plan Addendum, Landfill 2, 2003 September
- FTC-017, SWMU 45, Draft Final, RFI Work Plan Addendum, Range 1, 2003 September
- FTC-09, SWMU 5, Final, Initial Groundwater Investigation Work Plan Landfill 5, 2003 October
- FTC-08, SWMU 4, Final, RFI Report , 2003 October
- FTC-09, SWMU 5, Final, Post-Construction Groundwater and Soil Gas Monitoring Plan, Landfill 5, 2003 October
- FTC-09, SWMU 5, Final, Groundwater and Soil Gas Monitoring Report, First Quarter 2003, Landfill 5, 2003 October
- FTC-017, SWMU 45, Final, RFI Work Plan Addendum, Range 1, 2003 November
- FTC-09, SWMU 5, Final, Landfill 5 ET Cap Annual Performance Monitoring Report for 2001, 2003 December
- FTC-077, SWMU 165, Draft Final, RFI Report, Former Lime Pit at Building 8110 (Weston), 2003 December
- FTC-077, SWMU 165, Draft Final, RFI Report, Former Wash Rack at Building 8110 (Weston), 2003 December
- FTC-027, SWMU 48, Final, RFI Report and QCSR, 2003 December
- FTC-05,11,20,26,79,100, SWMUs 1,7,13,14,18,170,, Final, RFI Work Plan CLA, 2003
- FTC-093, SWMU 168, Draft Final, RFI Work Plan, Former POW Camp, 2003 December
- Misc. Documents, IAP Manuals dating from 1993 through present,

# IRP Contamination Assessment

## *Previous Studies*

### **2004**

- FTC-083, SWMU 167, October 2003 Indoor Air Sampling Analytical Results for North Specker, 2004 January
- FTC-019, 40, SWMUs 40, 47, 1st Quarter Groundwater Monitoring Data for Range 121 Open Detonation and Open Dumping Area, 2004 January
- FTC-09, SWMU 5, Draft Final, Landfill 5 Phase I Investigation for ET Cap at Landfill 5 (Golder Assoc.), 2004 January
- FTC-013, SWMU 9, Draft Final, RFI Work Plan, Landfill 9, 2004 January
- SWMU 58, Draft Final, RFI Report, Former Used/Waste Oil Tank - Building 218, 2004 February
- SWMU, 57, Draft Final, RFI Report, Former Used/Waste Oil Tank - Building 635, 2004 February
- FTC-047, SWMU 19, Draft Final, RFI Report, Land Spreading Field, 2004 February
- SWMU 84, ,Draft Final, Letter Work Plan Addendum, Former Used/Waste Oil Tanks - Building 8300, 2004 February
- SWMU 110, Draft Final, Letter Work Plan Addendum, Former Used/Waste Oil Tanks - Building 2427, 2004 February
- SWMU 111, Final, Phase I RFI Report, Former Used/Waste Oil Tank - Building 8110, 2004 March
- FTC-015, SWMU 11, Final, RFI Report, Landfill 11, 2004 March
- FTC-09, SWMU 5, Draft Final, Landfill 5 ET Cap GW and Soil Gas Monitoring Report for Nov. 2003, 2004 February
- FTC-033, SWMU 53, Draft Final, Supplemental RFI Work Plan, Building 8000 - Former Waste Oil/Solvent Underground Storage Tanks, 2004 March
- FTC-09, SWMU 5, Draft Final, Landfill 5 ET Cap Annual Performance Monitoring Report for 2003, 2004 March
- Module VI, NFA, Draft Final, Risk-Based Evaluation Procedures Manual, Module VI, Methodology for Identifying No Further Action at Solid Waste Management Units, 2004 March
- FTC-041, SWMU 54, Draft Final, RFI Report, Former Long-Term Haz. Waste Storage Area, 2004 March
- FTC-020, SWMU 13, Draft Final, Former Grit/Oil Pit IRA Summary Report, 2004 June
- FTC-021, 22, 23, 39, SWMUs 23, 24, 90, Draft Final, RFI, BECS, 2004 April
- FTC-09, SWMU 5, Final, Landfill 5 ET Cap Annual Performance Monitoring Report for 2002, 2004 April
- FTC-076, SWMU 163, Draft Final, RFI Report, Fort Carson Sewer System (Industrial Wastewater Lines), 2004 April
- FTC-077, SWMU 165, Final, RFI Report, Former Lime Pit at Building 8110 (Weston), 2004 April
- FTC-075, SWMU 36, Draft Final, RFI Report, Old Central Wash Rack, 2004 April
- FTC-077, SWMU 165, Final, RFI Report, Former Wash Rack at Building 8110 (Weston), 2004 April



# IRP Contamination Assessment

## *Previous Studies*

### **2004 (Cont'd)**

- FTC-09, SWMU 5, Final, Landfill 5 ET Cap Annual Performance Monitoring Report for 2003, 2004 April
- FTC-09, SWMU 5, Landfill 5 Evapotranspiration Cap Monthly Performance Monitoring Corrective Actions, 2004 April
- FTC-09, SWMU 5, Landfill 5 Evapotranspiration Cap Monthly Performance Monitoring Modification, Landfill 5, 2004 April
- FTC-09, SWMU 5, Landfill 5 Evapotranspiration Cap Column Lysimeters Precision and Accuracy, 2004 April
- FTC-05,11,20,26,79,100, SWMUs 1,7,13,14,18,170,, Draft Final, Quarterly Monitoring Report, 4th Quarter 2003 ICP, 2004 April
- Module I, Background Soil, Draft Final, Rev. 2, Risk Based Evaluation Procedures Manual Module 1, Background Soil, 2004 April
- Module I, Background Soil, Final, Risk Based Evaluation Procedures Manual Module 1, Background Soil, 2004 April
- Module V, Draft Final, Risk Based Evaluation Procedures Manual Module V, Tier I, 2004 April
- Module V, Draft Final, Risk Based Evaluation Procedures Manual Module V, Tier II, 2004 April
- SWMU 96, Draft Final, RFI Report, Former Used/Waste Oil Tank - Building 1404, 2004 April
- FTC-093, SWMU 168, Final, RFI Work Plan, Former POW Camp, 2004 March
- FTC-083, SWMU 167, Draft Final, CMS Work Plan for North Specker Avenue, 2004 April
- SWMU 91, Draft Final, Phase I RFI Report, Former Used/Waste Oil Tank - Building 9628, 2004 May
- SWMU 85, Final, Phase I RFI Report, Former Used/Waste Oil Tank - Building 8930, 2004 May
- FTC-027, SWMU 48, Draft Final, Letter Work Plan, Remedial Action at Range 123, 2004 May
- FTC-05,11,20,26,79,100, SWMUs 1,7,13,14,18,170,, Final, Quarterly Monitoring Report, 4th Quarter 2003 ICP, 2004 May
- FTC-010, SWMU 6, Draft Final, Construction Completion Report, Former Landfill 6 Waste Relocation, 2004 May
- FTC-06, SWMU 2, Final, RFI Work Plan Addendum, Landfill 2, 2004 May
- FTC-09, SWMU 5, Request for Reduction in Groundwater Monitoring Requirements, Landfill 5, 2004 May
- FTC-020, SWMU 13, Final, Interim Remedial Action, Source Removal Work Plan, Grit/Oil Pit, 2004 June
- FTC-05,11,20,26,79,100, SWMUs 1,7,13,14,18,170,, Draft Final, Quarterly Monitoring Report, 1st Quarter 2004 ICP, 2004 June
- FTC-05,11,20,26,79,100, SWMUs 1,7,13,14,18,170,, Draft Final, RFI CLA, 2004 June

# IRP Contamination Assessment

## *Previous Studies*

### **2004 (Cont'd)**

- FTC-047, SWMU 19, Final, Letter Work Plan Addendum, Land Spreading Field, 2004 June
- FTC-042, SWMU 22, Draft, Process Unit Demolition Report, Sewage Treatment Plant, 2004 June
- FTC-079, SWMU 18, Draft Final, RFI Report Addendum, Sludge Trench Pit, 2004 June
- FTC-05,11,20,26,79,100, SWMUs 1,7,13,14,18,170,, Draft Final, Quarterly Monitoring Report, 2nd Quarter 2004 ICP, 2004 June
- Final, Quarterly Groundwater Monitoring Letter Report-2003 Annual Basewide, 2004 July
- FTC-05,11,20,26,79,100, SWMUs 1,7,13,14,18,170,, Final, RFI CLA, 2004 August
- FTC-09, SWMU 5, Final, Results of ET Cap Inv., LF5, 2004 October
- Module V, Final, Risk Based Evaluation Procedures Manual Module V, Tier II, 2004 October
- Draft Final, Field and Laboratory Procedures Manual for Fort Carson Army Installation, 2004 October
- Module V, Final, Risk Based Evaluation Procedures Manual Module V, Tier I, 2004 October
- FTC-09, SWMU 5, Final, LF5 Groundwater & Soil Gas Monitoring Plan, LF5, 2004 October
- FTC-041, SWMU 54, Final, RFI Report, Former Long-Term Haz. Waste Storage Area, 2004 November
- FTC-05,11,20,26,79,100, SWMUs 1,7,13,14,18,170,, Draft Final, Quarterly Monitoring Report, 3rd Quarter 2004 ICP, 2004 December
- FTC-012, SWMU 8, Draft Final, Existing Cover Evaluation Work Plan, Landfill 8, 2004 December
- FTC-018, SWMU 46, NFA Request, Range 1A, 2004 December
- FTC-027, SWMU 48, Draft Final, Remedial Action Summ. Report, Range 123, 2004 December
- FTC-027, SWMU 48, Final, Remedial Action Summ. Report, Range 123, 2004 December
- FTC-034,36, SWMU 33,32, Draft Final, RFI Work Plan, Golf Course Sewage Treatment Plant Effluent and Sludge Spreading Area, 2004 December

### **2005**

- FTC-088, SWMU 169, Draft Final, RFI Report, Building 1211, 2005 January
- FTC-034,36, SWMU 33,32, Final, RFI Work Plan, Golf Course Sewage Treatment Plant Effluent and Sludge Spreading Area, 2005 January
- FTC-047, SWMU 19, Final, RFI Report, Land Spreading Field, 2005 January
- FTC-09, SWMU 5, LF5 ET Cap Monthly Performance Monitoring CAs Summary, 2005 January
- FTC-018, SWMU 46, NFA Request Addendum, Range 1A, 2005 January
- FTC-018, SWMU 46, CDPHE Approval of NFA Request and Addendum, Range 1A., 2005 January



# IRP Contamination Assessment

## *Previous Studies*

### **2005 (Cont'd)**

- FTC-027, SWMU 48, NFA Request, Range 123, 2005 February
- FTC-09, SWMU 5, Draft Final, ET Cap Annual Performance Monitoring Report for 2004, LF5, 2005 February
- Module VI, Interim Final, Risk-Based Evaluation Procedures Manual, Module VI, Methodology for Identifying No Further Action at Solid Waste Management Units, 2005 February
- FTC-09, SWMU 5, Draft Final, Groundwater & Soil Gas Monitoring Report, 2nd Semiannual Report 2004, LF5, 2005 February
- Module V, Final, (Rev. 1) Risk Based Evaluation Procedures Manual Module V, Tier II, 2005 March
- FTC-012, SWMU 8, Final, Existing Cover Evaluation Work Plan, Landfill 8, 2005 March
- FTC-021, 22, 23, 39, SWMUs 23, 24, 90, Final, RFI, BECS, 2005 March
- FTC-05,11,20,26,79,100, SWMUs 1,7,13,14,18,170, Draft Final, Quarterly Monitoring Report, 4th Quarter 2004 ICP, 2005 March
- FTC-033, SWMU 53, Final, Supplemental RFI Work Plan, Building 8000 - Former Waste Oil/Solvent Underground Storage Tanks, 2005 April
- FTC-027, SWMU 48, Revised NFA Request, Range 123, 2005 April
- FTC-093, SWMU 168, Draft Final, Letter RFI Workplan Addendum, former POW Camp, 2005 April
- FTC-093, SWMU 168, Final, Letter RFI Workplan Addendum, former POW Camp, 2005 May
- FTC-027, SWMU 48, CDPHE Approval of NFA Request and Revised Request, Range 123, 2005 May
- FTC-09, SWMU 5, Final, ET Cap Annual Performance Monitoring Report for 2004, LF5, 2005 May
- FTC-05,11,20,26,79,100, SWMUs 1,7,13,14,18,170, Draft Final, Quarterly Monitoring Report, 1st Quarter 2005 ICP, 2005 June
- FTC-06, SWMU 2, Draft Final, RFI, Landfill 2, 2005 June
- FTC-010, SWMU 6, Final, Construction Completion Report, Former LF6 Waste Relocation, 2005 June
- FTC-047, SWMU 19, Final, RFI Report (Revision 1), Land Spreading Field, 2005 June
- Module VI, Interim Final, Risk-Based Evaluation Procedures Manual, Module VI, Methodology for Identifying No Further Action at Solid Waste Management Units, 2005 June

### **Other**

- RAB Meeting Minutes and Newsletters,

# FORT CARSON INSTALLATION RESTORATION PROGRAM

## SITE DESCRIPTIONS

## SWMU 2/3 (FTC-006/007) LANDFILL 2/3 (1957-1978)

### SITE DESCRIPTION

Landfills 2 and 3 (SWMUs 2 & 3) are former contiguous landfills located east of the Cantonment Area that were operated from 1957 to 1978. This landfill was properly closed in accordance with solid waste regulations at the time landfill operations ceased. The RFA conducted in 1994 then identified this site for inclusion in the RCRA Part B permit. Therefore, all investigation and remediation is being conducted under the Corrective Action Program. Waste at this site consists of sanitary waste, sludges from multiple sources, waste petroleum, oil, and lubricants (POL), cinder ash and, potentially, explosives and UXO. A combined trench and area fill method was used at this 80-acre site. Part of the landfill (~50 acres) is currently covered with a soil cover.

Surface water control measures were installed in 1992. Grading activities were conducted in 1998 and 2000 to further control surface water.

There is evidence that leachate generated from this site has migrated to the groundwater; however it does not appear that contaminants are migrating from the area. Groundwater samples contained VOCs (mainly 1, 2-DCA) and inorganics (selenium) above CGWS. Low levels of petroleum products have also been detected, but below action levels.

RFI activities, which included the installation of additional groundwater wells and soil gas monitoring points, were completed in December 2004. The RFI Report will be submitted to CDPHE in May 2005.

### CLEANUP STRATEGY

Annual monitoring for 5 years.

Implement a CMS in FY09.

Implement remedy in FY10 (assumed design and construction of cap).

Perform long-term management (minor cover maintenance and groundwater monitoring specific to known constituents).

### STATUS

**ER,A**

**RRSE:** Medium

**COCs:** VOCs, Inorganics

#### **MEDIA OF CONCERN:**

Soil (landfill materials), Groundwater

<b>PHASES</b>	<b>Start</b>	<b>End</b>
RFA .....	198210.....	198301
CS .....	199503.....	199811
<b>RFI/CMS .....</b>	<b>199605 .....</b>	<b>201010</b>
DES .....	200910.....	201010
IRA.....	199209.....	199212
CMI(C) .....	201010.....	201109
LTM .....	201210.....	204110

**RC: 201109**

## SWMU 4 (FTC-008) LANDFILL 4 (1957)

### SITE DESCRIPTION

Landfill 4 (SWMU 4) is located in the northeast section of the Cantonment Area. According to historical records, Landfill 4 covered approximately 14 acres. The landfill was excavated into the alluvium and operated for about 6 months in 1957 to receive construction debris, sanitary wastes and possibly small amounts of sludge and waste petroleum, oil, and lubricants. The presence of shallow groundwater (less than 5 feet) forced the landfill to be abandoned. The Defense Reutilization and Marketing Office Storage Yard (FTC-024, SWMU 50) were subsequently built over the former landfill. This landfill was properly closed in accordance with solid waste regulations at the time landfill operations ceased. The RFA conducted in 1994 then identified this site for inclusion in the RCRA Part B permit. Therefore, all investigation and remediation is being conducted under the Corrective Action Program.

Groundwater monitoring indicated metals and VOCs below CGWS in the vicinity of this site. In 2002, an existing well was over drilled to collect samples of the PVC casing for analysis of vinyl chloride to determine if the well casing was degrading and the cause of vinyl chloride in groundwater. Analytical results indicated concentrations below the laboratory practical quantitation limits.

The RFI Report (Revision 2) was approved in October 2003 and no CMS was imposed.

### CLEANUP STRATEGY

Perform a risk evaluation.

Perform long-term management for both the groundwater and asphalt cover.

[Note: Installation-wide programmatic costs are also accounted for at this site.

These include perimeter monitoring wells, data base management, technical and program support, and annual updates of risk assessment modules.]

### STATUS

**ER,A**

**RRSE:** Low

**COCs:** VOCs, Inorganics

#### **MEDIA OF CONCERN:**

Soil (landfill material), Groundwater, Surface Water

<b>PHASES</b>	<b>Start</b>	<b>End</b>
RFA .....	198210.....	198301
CS .....	199503.....	199812
RFI/CMS .....	199810.....	200409
<b>LTM .....</b>	<b>200410.....</b>	<b>203310</b>

**RC: 200409**

# SWMU 5 (FTC-009)

## LANDFILL 5 (1946-1956) (PAGE 1 OF 2)

### SITE DESCRIPTION

Landfill 5 (SWMU 5) is an abandoned landfill located in the northeast corner of the Cantonment Area, close to the installation boundary, covering ~20 acres. It was operated from 1946 to 1956. Historical records indicate that accepted wastes included construction debris, mixed sanitary waste, waste POL, waste from the old mule barn area, coal cinders and ash. This landfill was properly closed in accordance with solid waste regulations at the time landfill operations ceased. The RFA conducted in 1994 then identified this site for inclusion in the RCRA Part B permit. Therefore, all investigation and remediation is being conducted under the Corrective Action Program. The RFI report was approved by CDPHE in September 2001.

A composite cap (IRA) with an asphalt surface was installed in fall 1999 over 5 acres of the site to manage stormwater runoff and facilitate vehicle parking for the 96th ARCOM. In 2000, an evapotranspiration (ET) cap (IRA) was installed over 15 acres and upgradient and downgradient wells were installed. Moisture monitoring at the ET cap continues to show performance above expectations.

Although previously noted that groundwater monitoring has detected nitrate above drinking water standards leaving the post, sampling performed to date has not identified an off-post threat. Installation-wide distribution of nitrate in groundwater is being investigated and will incorporate nitrate concentrations detected at Landfill 5. TCE has also been detected and concentrations have dropped under CGWS in recent years.

Elevated levels of methane have been detected in soil gas probes east of the motorpool cap. However, wind-driven turbines placed on select gas probes have been effective in venting the elevated levels. New soil gas monitoring probes were installed in August 2004 and are sampled quarterly in accordance with the approved Corrective Action Work Plans.

The ET Cap was approved by CDPHE in November 2004, following additional soil classification and cap installation investigation activities. In December 2004, the CDPHE approved the Final Initial Groundwater Investigation Summary Report. No CMS was imposed, acknowledging that Landfill 5 has not contributed to groundwater contamination above screening levels downgradient of the landfill. As a result, this SWMU has completed the remedy phase of corrective action and is now undergoing the long-term management phase.

### STATUS

**ER,A**

**RRSE:** Medium

**COCs:** VOCs, Inorganics

#### **MEDIA OF CONCERN:**

Soil (landfill material), Groundwater, Surface Water

<b>PHASES</b>	<b>Start</b>	<b>End</b>
RFA .....	198210 .....	198301
CS .....	199503 .....	199707
RFI/CMS .....	199605 .....	200412
IRA .....	199805 .....	200010
<b>LTM .....</b>	<b>200412 .....</b>	<b>202410</b>

**RC: 200412**

## **SWMU 5 (FTC-009)**

### **LANDFILL 5 (1946-1956) (PAGE 2 OF 2)**

#### **CLEANUP STRATEGY**

Perform long-term management (minor cap maintenance and groundwater monitoring) in accordance with the approved Corrective Action Work Plans.

## SWMU 7 (FTC-011)

### LANDFILL 7 (1968-1978)

#### SITE DESCRIPTION

Landfill 7 (SWMU 7) is an inactive landfill located within the Landfill 1 certificate of designation and has been included as part of the Combined Landfill Area (CLA) investigation. It operated as a canyon fill landfill from 1968 to 1978, accepting construction debris and other material. The total area of the landfill is six acres, which currently has a soil cover. This landfill was properly closed in accordance with solid waste regulations at the time landfill operations ceased. The RFA conducted in 1994 then identified this site for inclusion in the RCRA Part B permit. Therefore, all investigation and remediation is being conducted under the Corrective Action Program. The CLA RFI Report was submitted to CDPHE in June 2004 and approved in August 2004, at which time a CMS was imposed.

#### CLEANUP STRATEGY

This SWMU will undergo interim management (to include groundwater, soil gas and cover monitoring) until site closeout.

Implement a CMS in FY05.

Evaluate, design, augment, maintain and inspect existing cover, as needed.

Perform long-term management (minor maintenance and groundwater monitoring as part of the CLA).

#### STATUS

**ER,A**

**RRSE:** Low

**COCs:** None

#### **MEDIA OF CONCERN:**

Soil (landfill material, Groundwater, Surface Water

<b>PHASES</b>	<b>Start</b>	<b>End</b>
RFA .....	198210 .....	198301
CS .....	199810 .....	199812
<b>RFI/CMS .....</b>	<b>200312 .....</b>	<b>200610</b>
CMI(C) .....	200610 .....	201009
LTM .....	201010 .....	201510

**RC: 201010**



## SWMU 8 (FTC-012) LANDFILL 8 (1972-1973)

### SITE DESCRIPTION

Landfill 8 (SWMU 8) consists of two canyon fill landfills, which operated from 1972 to 1973. These areas total ~13 acres and received construction and demolition debris. This landfill was properly closed in accordance with solid waste regulations at the time landfill operations ceased. The RFA conducted in 1994 then identified this site for inclusion in the RCRA Part B permit. Therefore, all investigation and remediation is being conducted under the Corrective Action Program and in accordance with Subtitle D regulations. This landfill is located directly north of Landfill 2/3 (SWMU 2/3). RFI fieldwork activities were conducted in 2002 and included trenching, soil gas monitoring, and groundwater monitoring well installation (all dry).

RFI data demonstrates minimal impacts to soil, groundwater and surface water.

The RFI Report was submitted in July 2003 and approved in June 2004. A CMS was not imposed for this SWMU, however, a presumptive remedy will be completed in order to assess current cover thickness and mitigate storm water runoff at the landfill. A work plan detailing the cover evaluation was approved by CDPHE in March 2005.

### CLEANUP STRATEGY

The cover evaluation fieldwork will be implemented in FY05 (funded in FY04).

A presumptive remedy selection, including risk evaluation will be developed for the site.

Perform long-term management (minor maintenance of the cover and five years groundwater monitoring).

### STATUS

**ER,A**

**RRSE:** Low

**COCs:** VOCs

#### **MEDIA OF CONCERN:**

Soil (landfill material), Groundwater, Surface Water

<b>PHASES</b>	<b>Start</b>	<b>End</b>
RFA .....	198210.....	198301
CS .....	199805.....	199912
<b>RFI/CMS .....</b>	<b>199910.....</b>	<b>200510</b>
DES .....	200510.....	200610
CMI(C) .....	200510.....	200810
LTM .....	200810.....	201310

**RC: 200810**

## SWMU 9 (FTC-013) LANDFILL 9 (1965-1973)

### SITE DESCRIPTION

Landfill 9 (SWMU 9) is a 7.5 acre, abandoned landfill located south of the Cantonment Area. The specific nature of activities conducted during the landfill's period of operation (1965 to 1973) is unknown, but most likely consisted of receiving construction debris. This landfill was properly closed in accordance with solid waste regulations at the time landfill operations ceased. The RFA conducted in 1994 then identified this site for inclusion in the RCRA Part B permit. Therefore, all investigation and remediation is being conducted under the Corrective Action Program.

Two temporary wells were installed downgradient of the landfill during the RFA. Groundwater samples collected from these wells contained metals below CGWS, but above interim background levels established at the time.

The RFI work plan was submitted to CDPHE in January 2004, approved in August 2004, and implemented between October 2004 and February 2005. Fieldwork included the installation of monitoring wells and soil gas probes, groundwater, sediment, surface water and leachate sampling, and a geophysical survey (EM-31/61) and confirmatory trenching to define landfill boundaries.

### CLEANUP STRATEGY

The RFI Report will be submitted to CDPHE in July 2005.

It is anticipated that a presumptive remedy selection (to include a soil cover evaluation and a storm water runoff assessment), including risk evaluation will be developed for the site pending CDPHE review of the RFI.

Evaluate, design, augment, maintain and inspect existing cover, as needed.

Perform long-term management (minor maintenance of the cover and groundwater monitoring).

### STATUS

**ER,A**

**RRSE:** Medium

**COCs:** VOCs, Inorganics

#### **MEDIA OF CONCERN:**

Soil (landfill material), Groundwater, Surface Water

<b>PHASES</b>	<b>Start</b>	<b>End</b>
RFA .....	198210.....	198301
CS .....	199801.....	199901
<b>RFI/CMS .....</b>	<b>200210.....</b>	<b>200610</b>
DES .....	200610.....	200710
CMI(C).....	200610.....	200710
LTM .....	201110.....	203510

**RC: 200710**

# SWMU 13 (FTC-020)

## GRIT/OIL PIT

### SITE DESCRIPTION

The Grit/Oil Pit (SWMU 13) is located within the Landfill 1 certificate of designation and has been included as part of the Combined Landfill Area (CLA) investigation. This site was an open pit where Fort Carson deposited the material from the vehicle wash facilities, and the Industrial and Sanitary Wastewater Treatment Plant sludge, and was in operation from 1960s to 1992. The material was placed in a trench measuring 240 x 60 x 30 ft. This site was included in both the 1994 and 1997 (which is still open) Compliance Orders on Consent. The Grit Pit portion of the 1997 Compliance Order will be completed upon approval of the forthcoming May 2005 Interim Remedial Measure Summary Report.

Samples indicated the presence of metals, VOCs (including TCE, and vinyl chloride), BTEX, and PAHs in the sludges, surrounding soil and in leachate/groundwater immediately downgradient of the site.

In 1998, a surface water control measure (temporary cap) was placed over the pit to reduce the infiltration of surface water. In 1999, water and product removal commenced and were successful in removing the oily product from the pit. The RFI was approved by CDPHE in March 2000 and in 2002, a SVE pilot test was completed and considered moderately successful in reducing the concentrations of VOCs in the pit material.

In July 2004, CDPHE approved an Interim Measure Source Removal Workplan and the contents of the Grit/Oil Pit were subsequently removed between November 2004 and January 2005. Analytical results of the confirmatory soil samples collected from the excavation following removal were below Fort Carson site-specific risk-based screening levels.

The Grit/Oil Pit is currently undergoing interim monitoring until closure of the site.

### CLEANUP STRATEGY

Conduct a CMS and implement selected remedy.

Perform long-term management (groundwater monitoring as part of the CLA).

### STATUS

**ER,A**

**RRSE:** High

**COCs:** VOC's, SVOC's, Metals

#### **MEDIA OF CONCERN:**

Soil, Groundwater, Surface Water

<b>PHASES</b>	<b>Start</b>	<b>End</b>
RFA .....	198803 .....	198804
CS .....	199511 .....	199901
<b>IRA .....</b>	<b>199909 .....</b>	<b>200509</b>
<b>RFI/CMS .....</b>	<b>199511 .....</b>	<b>200610</b>
DES .....	200510 .....	200610
CMI(C) .....	200510 .....	200709
LTM .....	200810 .....	201310

**RC: 200709**

## SWMU 14 (FTC-026) PETE'S HILL DUMP

### SITE DESCRIPTION

Pete's Hill Dump (SWMU 14) is an inactive ~13.5-acre landfill located within the Landfill 1 certificate of designation and has been included as part of the Combined Landfill Area (CLA) investigation. From sometime before 1976 to the early 1990s, waste and construction debris were dumped over the head wall of a box canyon. Records indicate that the site received construction debris, municipal waste and wash rack residuals. In 1992/93, the area was re-contoured and covered to control surface water. Preliminary RFI activities were conducted in 2002.

Monitoring wells installed downgradient of Pete's Hill have detected metals above background levels but below groundwater standards.

The CLA RFI Report was submitted to CDPHE in June 2004 and approved in August 2004, at which time a CMS was imposed.

This site is currently undergoing interim monitoring until closure of the site.

### CLEANUP STRATEGY

This SWMU will undergo interim management (to include groundwater, soil gas and cover monitoring) until site closeout.

Implement a CMS in FY05.

Evaluate, design, augment, maintain and inspect existing cover, as needed.

Perform long-term management (minor maintenance and groundwater monitoring as part of the CLA).

### STATUS

**ER,A**

**RRSE:** Low

**COCs:** Metals

**MEDIA OF CONCERN:**

Soil (landfill material), Groundwater

<b>PHASES</b>	<b>Start</b>	<b>End</b>
RFA .....	198803 .....	198804
IRA .....	199309 .....	199509
<b>RFI/CMS .....</b>	<b>200010 .....</b>	<b>200610</b>
<b>CMI(C) .....</b>	<b>200510 .....</b>	<b>200910</b>
LTM .....	200910 .....	201410

**RC: 200910**

# SWMU 16 (FTC-058)

## VAPOR DEGREASER SITE, BLDG 8000

### SITE DESCRIPTION

The Vapor Degreaser (SWMU 16) operated from the mid-1970s until 1992, when it was removed. Maintenance personnel used the vapor degreaser to clean parts with either TCE or 1,1,1-Trichloroethane (VOCs). The stainless steel vapor unit was located in a 7-foot deep concrete lined pit. The pit, located in Building 8000, is currently covered by a grate and used to control the wash water generated from general housekeeping activities within Building 8000 and the wash water that drips from the nearby Jet Spray Washers (FTC-058/SWMU 17).

Chlorinated VOCs have been detected in the soil below the pit in sampling events between 1992 and 1996, but groundwater was not encountered during the RFI activities. After the first phase of the RFI, CDPHE requested additional soil samples below the sump area. In November 1999, additional soil samples were taken and the sump and contaminated soil were removed. The sump excavation was backfilled with clean gravel and covered with concrete. During site restoration, two temporary wells were installed within the former sump excavation.

In 2001, water trapped in the former sump excavation was sampled and purged (total of 119 gallons) on a quarterly basis to determine if shallow groundwater or residual liquid was the source of the water. Due to fluctuating concentrations of chlorinated solvents and the volume of water purged each quarter, Fort Carson was unable to discern if the source of the water was groundwater or residual wastewater.

The RFI report was submitted to the CDPHE in October 2002 and approved in November 2002, at which time a CMS was imposed.

Since the Building 8000 complex is still undergoing extensive investigation, it was requested that the CMS for the Vapor Degreaser be extended until the surrounding area has been better characterized. This request was granted by CDPHE in June 2004.

### CLEANUP STRATEGY

It is anticipated that the CMS will be performed collectively with SWMU 53 (funded with prior year funds).

Implement corrective measure (funded under SWMU 53).

### STATUS

**ER,A**  
**RRSE:** Medium

**COCs:** VOC's

**MEDIA OF CONCERN:**  
Soil, Groundwater

<b>PHASES</b>	<b>Start</b>	<b>End</b>
RFA .....	198210 .....	198301
CS .....	199503 .....	199812
IRA .....	199910 .....	199912
<b>RFI/CMS .....</b>	<b>199801 .....</b>	<b>200610</b>
LTM .....	200610 .....	200710

**RC: 200610**

# SWMU 18 (FTC-079) SLUDGE TRENCH/PIT

## SITE DESCRIPTION

The Sludge Trench/Pit (SWMU 18) was an unlined pit that received waste sludge from the Industrial Wastewater Treatment Plant (IWTP) (SWMU 21) ponds upon approval from CDPHE. The sludge consisted primarily of oily sand, silt, and clay. In 1985, CDPHE approved the request for 2,300 cubic yards of IWTP sludge to be disposed in the pit.

A groundwater investigation was conducted in September 1996 (Letter Report for Relative Risk Groundwater Sampling of Selected Sites). Groundwater was not encountered.

In June 1997, a hand auger sample was collected to characterize the contents of the pit. Results indicated petroleum hydrocarbons and metal contaminants. No VOCs were detected.

As part of the RFI pre-characterization sampling activities were conducted in March and April 2001 to provide aerial extent, depth to and thickness of the sludge materials. In August 2001, approximately 16,530 bcy of soil/sludge was removed. Low levels of petroleum hydrocarbons were detected and elevated levels of oil and grease were identified. Other than one estimated concentration of methylene chloride, a common laboratory contaminant, no additional organics were identified. The Draft Final RFI Report was submitted to CDPHE in December 2002. In 2003, the SWMU was included in the Combined Landfill Area (CLA). Therefore, an addendum to the existing RFI Report was submitted in June 2004. The addendum summarized the additional data collected from the site during the CLA investigation. The December 2002 RFI Report and June 2004 RFI Report Addendum were approved by the CDPHE in June 2004. A CMS was not imposed for this site.

## CLEANUP STRATEGY

Perform risk evaluation (not including eco) with an NFA request. (funded with prior year funds)

## STATUS

**ER,A**

**RRSE:** Low

**COCs:** TPH, Metals

**MEDIA OF CONCERN:**

Soil

PHASES	Start	End
RFA .....	199402 .....	199405
CS .....	199810 .....	199907
IRA .....	200107 .....	200110
RFI/CMS .....	200310 .....	200409
LTM .....	200410 .....	200509

**RC: 200409**

## SWMU 19 (FTC-047) LAND SPREADING FIELD

### SITE DESCRIPTION

The Land Spreading Field (SWMU 19) site is an open area ~2 acres in size where digested sewage sludge from the Sewage Treatment Plant (STP) was placed into three bermed areas. Some of this sludge may have been spread and tilled into the soil around the lagoons. The Land Spreading Field is located east of Landfill 1 (FTC-005). Operations began in the early 1980s and continued until 1988. During multiple site visits, considerable evidence of black organic soils and trash were observed. Samples collected from the STP indicated that low levels of metals were present in the sludge.

A number of groundwater monitoring wells located west of the Land Spreading Field have been historically dry.

A RFI work plan was submitted to CDPHE in January 2002. RFI activities included the collection of soil samples and the installation of temporary wells in and around the three bermed areas. Limited concentrations of semi-volatile organic compounds and inorganics above risk based concentration and groundwater protection levels were detected in shallow soil samples. No groundwater was encountered for sampling.

The Draft Final RFI Report was submitted in February 2004. Based on CDPHE review, additional fieldwork was performed between June and August 2004, which included the installation of one downgradient monitoring well, groundwater sampling, soil removal and additional soil sampling. Results of the additional fieldwork identified that a pathway to groundwater is not evident at the site and that the excavation effort successfully removed two isolated areas exhibiting elevated levels of inorganics and benzo(a)pyrene. The revised RFI Report will be submitted to CDPHE in May 2005.

### CLEANUP STRATEGY

Perform risk evaluation with NFA request.

### STATUS

**ER,A**

**RRSE:** Low

**COCs:** Metals

**MEDIA OF CONCERN:**

Soil

<b>PHASES</b>	<b>Start</b>	<b>End</b>
RFA .....	198210 .....	198301
CS .....	199802 .....	199812
<b>RFI/CMS .....</b>	<b>199906 .....</b>	<b>200510</b>
<b>LTM .....</b>	<b>200510 .....</b>	<b>200610</b>

**RC: 200510**



# SWMU 24 (FTC-021/022)

## FIRE TRAINING AREA AND FIRE TRAINING STORAGE AREA

### SITE DESCRIPTION

This site (SWMU 24) consists of both the Fire Training Area (FTC-021) and Fire Training Storage Area (FTC-022). The two sites were combined under one AEDB-R number because they are contiguous sites.

FTC-021 was a 60 x 60 x 3 ft deep concrete basin (which was removed in 1996) located at the east end of Butts Army Airfield. Burns were conducted from the 1960s to 1993. The water and fire-retardant chemicals used in the exercises were discharged to an oil/water separator, which discharged to the adjacent sewage treatment lagoon (FTC-039).

The former storage area (FTC-022), where off-specification/waste fuels were stored for exercises at the adjacent fire training area, was used from the 1970s to 1992. The storage area is located immediately east of the former Fire Training Area.

In 1992, the U.S. Army Corps of Engineers Research Laboratories (CERL) conducted a sludge study.

Samples collected from the oil/ water separator detected metals, chlorinated VOCs (solvents), and TPH. The oil/water separator was removed in 2000. Additional soil and groundwater samples taken in 1995-2000 indicated PCE above CGWS (5ug/L) in several wells located up to 500 ft downgradient from the storage area.

In 2001, removal of the oil/water separator, separator contents and surrounding shallow soil was completed. Leaks were detected in the piping between the concrete structure and the oil/water separator resulting in solvent and POL-contaminated soil still at the site. In 2001, 2002, and 2003, additional soil and groundwater samples were collected at the site to address CDPHE comments on the RFI report.

This site has been combined with the nearby Sewage Treatment Lagoons (SWMU 23/FTC-039) under one investigation, which is referred to as the Butts East Combined Sites (BECS) investigation. The BECS RFI was approved by CDPHE in April 2005 and a CMS imposed.

### CLEANUP STRATEGY

Perform CMS (funded with prior year funds) and implement selected remedy.

Continue to monitor groundwater and evaluate the need for future actions.

### STATUS

**ER,A**

**RRSE:** Medium

**COCs:** , VOC's, POL

**MEDIA OF CONCERN:**

Soil, Groundwater

<b>PHASES</b>	<b>Start</b>	<b>End</b>
RFA .....	198803 .....	198804
CS .....	199504 .....	199810
<b>RFI/CMS .....</b>	<b>199605 .....</b>	<b>200610</b>
<b>DES .....</b>	<b>200510 .....</b>	<b>200610</b>
IRA .....	200106 .....	200108
CMI(C) .....	200510 .....	200810
CMI(O) .....	200610 .....	200810
LTM .....	200810 .....	201310

**RC: 200810**

# SWMU 27 (FTC-044)

## DRAINAGE DITCH ADJACENT TO BUILDING 301

### SITE DESCRIPTION

Drainage from a wash rack and garage at Building 301 was discharged through underground pipes that emptied into this drainage ditch (SWMU 27) from the 1950s to 1981. This ditch drains to B Ditch.

Samples were collected from groundwater, surface water and sediment. Sampling results have not indicated any constituents of concern above groundwater standards, but low levels of VOCs (PCE) were detected.

The Revised RFI Report was approved by CDPHE in 2002 and no CMS imposed.

### CLEANUP STRATEGY

Perform a risk evaluation with NFA Request (funded with prior year funds).

### STATUS

**ER,A**

**RRSE:** Low

**COCs:** VOC's

#### **MEDIA OF CONCERN:**

Soil, Groundwater, Surface Water

<b>PHASES</b>	<b>Start</b>	<b>End</b>
RFA .....	198803 .....	198804
CS .....	199503 .....	199901
RFI/CMS .....	199901 .....	200410

**RC: 200412**

# SWMU 29 (FTC-045A)

## BATTERY NEUTRALIZATION SHOP, BLDG 8030

### SITE DESCRIPTION

A total of three Battery Shops exist as SWMUs at Fort Carson: SWMU 28/FTC-045B–Building 8000, SWMU 29/FTC-045A – Building 8030, and SWMU 30/FTC-045C–Building 8142. The shop at Building 8030 (SWMU 29) operated from approximately 1980 to 1993. Electrolytes from batteries were discharged into a floor drain. The drain leads to a holding/neutralization tank where the electrolyte was neutralized with sodium bicarbonate before being discharged to the industrial wastewater system. In 1993, the area around the floor drain was excavated to repair the drain. However it was not possible to repair the drain, as the drain was plugged. The shop room is currently utilized as a break room.

The soil samples collected in 1999 contained inorganics above interim background levels. A few hydrocarbon compounds were also detected in soil samples at low concentrations.

Groundwater was not encountered in the wells installed for the RFI at this site. The sump was sampled in 2001, and cleaned and decontaminated in 2002.

The RFI report (for all three SWMUs) was submitted to CDPHE in 2001 and approved in 2002. No CMS imposed.

### CLEANUP STRATEGY

Perform a risk evaluation (excluding groundwater) with NFA request (funded with prior year funds).

### STATUS

**ER,A**

**RRSE:** Low

**COCs:** Metals

**MEDIA OF CONCERN:**

Soil

<b>PHASES</b>	<b>Start</b>	<b>End</b>
RFA .....	198803 .....	198804
CS .....	199812 .....	199901
RFI/CMS .....	199901 .....	200308
<b>LTM .....</b>	<b>200410 .....</b>	<b>200509</b>

**RC: 200308**

# SWMU 30 (FTC-045C)

## BATTERY NEUTRALIZATION SHOP, BLDG 8142

### SITE DESCRIPTION

A total of three Battery Shops exist as SWMUs at Fort Carson: SWMU 28/FTC-045B – Building 8000, SWMU 29/FTC-045A – Building 8030, and SWMU 30/FTC-045C – Building 8142.

The shop at Building 8142 (SWMU 30) operated from 1978 to August 1990. Electrolytes from batteries were discharged into a floor drain. The drain leads to a holding/neutralization tank where the electrolyte was neutralized with sodium bicarbonate before being discharged to the sewer system. In 1993, the area around the floor drain was excavated to repair the drain. However it was not possible to repair the drain, and the floor drain was permanently sealed with concrete and the piping was removed. Present operations include storage of batteries.

The soil samples collected in 1999 contained inorganics above background but below regulatory levels. Some organic compounds were also detected in soil samples at low concentrations. Chlorinated VOCs were detected at concentrations below groundwater standards in the wells.

The RFI report (for all three SWMUs) was submitted to CDPHE in 2001 and approved in 2002. No CMS was imposed.

### CLEANUP STRATEGY

Perform a risk evaluation with NFA Request (funded with prior year funds).

### STATUS

**ER,A**

**RRSE:** Low

**COCs:** Metals

**MEDIA OF CONCERN:**

Soil, Groundwater

<b>PHASES</b>	<b>Start</b>	<b>End</b>
RFA .....	198803 .....	198804
CS .....	199812 .....	199901
RFI/CMS .....	199901 .....	200409
<b>LTM .....</b>	<b>200410 .....</b>	<b>200509</b>

**RC: 200409**

## SWMU 31 (FTC-048) DEMOLITION AREA

### SITE DESCRIPTION

Parallel trenches were reportedly used to dispose of UXO in an ~2.5 acre area located west of Landfill 2/3. This area (SWMU 31) was reportedly operated prior to 1955 until approximately 1967.

Evidence of UXO disposal was not found during sampling at the reported location. Groundwater was not encountered during sampling. Inorganics and metals in soil were detected at levels below background.

The city of Fountain placed a water line through a portion of the investigated site and encountered no evidence of explosives.

A Final RFI report was submitted in November 2001 and was approved by CDPHE in January of 2002. No CMS was imposed.

A follow-up review of aerial photo features did not suggest demolition activities at a nearby site.

A letter was submitted to CDPHE in 2003 summarizing recent review activities including aerial photo analysis, interviews with site personnel, and site reconnaissance to support NFA request submitted to CDPHE in March 2002.

The RCRA Part B permit has been modified to indicate that no further action at this site is required.

### STATUS

**ER,A**

**RRSE:** Low

**COCs:** Metals

**MEDIA OF CONCERN:**

Soil

<b>PHASES</b>	<b>Start</b>	<b>End</b>
RFA .....	198210 .....	198301
CS .....	199503 .....	199812
RFI/CMS .....	199901 .....	200401

**RC: 200401**

### CLEANUP STRATEGY

None. SWMU has been closed in the Part B Permit.

# SWMU 34 (FTC-032)

## VEHICLE WASH RACK STORM DRAINAGES, B DITCH AND CLOVER DITCH

### SITE DESCRIPTION

Vehicle wash rack wastewater from the three former motor pools located at the intersection of Titus Blvd. and Specker Avenue, was discharged to the sanitary sewer system. Storm water from these former motor pools discharged into drainage ditches along Frontage Rd (SWMU 34) and ultimately into Clover Ditch.

Sampling conducted to date has not indicated any contaminants of concern over action levels although low levels of petroleum hydrocarbons were detected.

The former motor pools have been demolished and the sites are currently utilized as storage areas.

Organics detected in well VWRMW3 will be addressed under the RFI for Bldg 2940 (FTC-023/SWMU 75).

The RFI Report was approved by CDPHE in 2002 and no CMS imposed.

### STATUS

**ER,A**

**RRSE:** Low

**COCs:** Metals, POL

**MEDIA OF CONCERN:**

Soil, Groundwater

<b>PHASES</b>	<b>Start</b>	<b>End</b>
RFA .....	198210 .....	198301
CS .....	199503 .....	199811
RFI/CMS .....	199902 .....	200509
LTM .....	200510 .....	200610

**RC: 200509**

### CLEANUP STRATEGY

Perform a risk evaluation with NFA Request.

# SWMU 36 (FTC-075) OLD CENTRAL WASH RACK

## SITE DESCRIPTION

The Old Central Wash Rack (SWMU 36) is located just south of the New Central Wash Rack (FTC-074) along Clover Ditch. The site was operated from approximately 1980 to 1989. It discharged wastewater to the Industrial Wastewater Treatment Facility. The wash rack equipment was removed and the sumps were filled with concrete when the New Central Wash Rack was constructed in 1989.

Two temporary wells were installed during the voluntary investigation, and metals were detected at concentrations below regulatory standards.

This site has been identified as a Supplemental Environmental Project (SEP) under the 1997 Order on Consent. A RFI work plan was submitted in 1996; however, it was never implemented.

The RFI Report, based on historical documents, limited site operations, and groundwater samples from the temporary wells installed adjacent to the site, was submitted to CDPHE in February 2004. Following review of the RFI Report, CDPHE requested a work plan to perform additional fieldwork.

## STATUS

### ERA

**RRSE:** Low

**COCs:** Metals, VOCs

### MEDIA OF CONCERN:

Soil, Groundwater

<b>PHASES</b>	<b>Start</b>	<b>End</b>
RFA .....	199401 .....	199403
CS .....	199801 .....	199812
<b>RFI/CMS .....</b>	<b>200310 .....</b>	<b>200510</b>
<b>LTM .....</b>	<b>200510 .....</b>	<b>200610</b>

**RC: 200510**

## CLEANUP STRATEGY

Submit a revised RFI work plan and submit RFI Report (funded with prior year funds)

It is anticipated that a risk evaluation and NFA Request will be completed.



# SWMU 45 (FTC-017)

## RANGE 1, OPEN BURN GROUNDS

### SITE DESCRIPTION

The Open Burn Grounds at Range 1 (SWMU 45) consisted of two crossing trenches, 100 feet long and 1 to 2 feet deep and a concrete pad. The site is located near the intersection of Butts Road and Specker Avenue. Excess propellant was burned at this location from 1963 to 1996. In December 1994, a concrete basin was installed to replace the earthen trenches. In October 1996, Fort Carson began use of the new concrete basin, allowing SWMU 45 to become inactive.

In 1985, a team from the U.S. Army Environmental Hygiene Agency took 22 surface and subsurface soil samples. Explosives were detected in the surface soil, but not in the subsurface soil. Groundwater samples collected between 1985 and 1997 did not detect explosive compounds except for one well in 1988.

Explosive compounds were not detected in soil or groundwater during an investigation in 1999; however, inorganics (primarily nitrate) were detected above CGWS. Results of the 1999 investigation were reported in an RFI report (May 1999).

In 2001, the contents of the concrete basin were removed (water and sand), and in April 2002, additional wells were installed to address CDPHE comments to the RFI report. Elevated levels of nitrates were detected above MCLs in the groundwater. In May 2002, the concrete basin was demolished and soil samples were collected. Low concentrations of nitrates and one detection of PETN (explosive compound) were detected in the soil samples.

In 2004, additional field activities included collecting additional samples beneath the former concrete basin and installing both upgradient and downgradient groundwater monitoring wells. The installation of additional monitoring wells to further define the nature and extent of elevated concentrations of nitrate in groundwater and potential source(s) is on hold pending completion of the installation-wide nitrate evaluation.

### CLEANUP STRATEGY

Following completion of the installation-wide nitrate evaluation, evaluate existing field data and determine course of action.

Finalize RFI report and perform risk evaluation with NFA Request. Continue annual groundwater monitoring.

### STATUS

**ER,A**

**RRSE:** Medium

**COCs:** Explosives, Inorganics

**MEDIA OF CONCERN:**

Groundwater

<b>PHASES</b>	<b>Start</b>	<b>End</b>
RFA .....	198210 .....	198301
CS .....	199801 .....	199909
<b>RFI/CMS .....</b>	<b>199805 .....</b>	<b>200610</b>
LTM .....	200610 .....	200710

**RC: 200610**

# **SWMU 46 (FTC-018)**

## **RANGE 1A, OPEN BURN GROUNDS**

### **SITE DESCRIPTION**

The Abandoned Open Burn Grounds at Range 1A (SWMU 46) included two intersecting trenches near the intersection of Routes 9 and 11. The trenches measured ~150 feet long and ~1 foot deep. From 1963 to 1987, the units training near this area burned unused propellant in these trenches. There has been no evidence of contaminant release.

No groundwater was encountered during site investigations.

In 2001, the trenches and nearby surface propellant pellets were excavated and disposed. No explosive related components were detected in the confirmation samples. The revised RFI report was submitted to CDPHE in March 2002 and approved in September 2002.

A NFA Request and NFA Request Addendum were submitted to CDPHE in December 2004 and January 2005, respectively. CDPHE approved both documents in January 2005.

### **CLEANUP STRATEGY**

In 2005, the Part B Permit will be modified to reflect no further action as the final remedy.

### **STATUS**

**ER,A**

**RRSE:** Low

**COCs:** Explosives, Propellants

**MEDIA OF CONCERN:**

Soil

<b>PHASES</b>	<b>Start</b>	<b>End</b>
RFA .....	198210 .....	198301
CS .....	199503 .....	199812
<b>RFI/CMS .....</b>	<b>199906 .....</b>	<b>200509</b>
<b>LTM.....</b>	<b>200510 .....</b>	<b>200610</b>

**RC: 200509**

# SWMU 50 (FTC-024)

## DRMO, INACTIVE HAZ WASTE STORAGE AREA

### SITE DESCRIPTION

This storage area (SWMU 50) operated from 1958 to 1983 and is located in the Cantonment near the newly constructed Building 320. Activities here included open area storage of hazardous waste products including: epoxies, hydraulic fluids, dried paint wastes, asbestos, PCBs and flammables. Two, 30 x 20 feet protective shelters were used as the storage facility. The site covers ~1 acre and is located north of Landfill 4 (FTC-008/SWMU 4).

There are four groundwater monitoring wells surrounding this site. These wells were installed to monitor the impacts of the groundwater as the result of Landfill 4 operations. There have been no contaminants detected in the groundwater that can be associated with this site. Low levels (below regulatory levels) of PCB have been detected in shallow soils at the north end of this site.

In June 2001, the RFI report was approved by CDPHE and no CMS was imposed.

### CLEANUP STRATEGY

Perform a risk evaluation with NFA request (funded in FY02).

### STATUS

**ER,A**

**RRSE:** Low

**COCs:** Inorganics

**MEDIA OF CONCERN:**

Groundwater, soil

<b>PHASES</b>	<b>Start</b>	<b>End</b>
RFA .....	198210 .....	198301
CS .....	199503 .....	199811
RFI/CMS .....	199901 .....	200410
<b>LTM .....</b>	<b>200410 .....</b>	<b>200509</b>

**RC: 200410**

# SWMU 51 (FTC-043)

## DIO HAZARDOUS WASTE STORAGE AREA

### SITE DESCRIPTION

The Directorate of Industrial Operations (DIO) site (SWMU 51) included three, 8 x10 foot concrete metals sheds with concrete floors located in the yard east of Bldg 301. Stoddard Type II waste solvents were stored in 55-gallon drums inside the sheds from 1951 to 1981. The buildings have been removed. The concrete pads were removed in 1999 along with a small amount of hydrocarbon-contaminated soil.

Additional soil samples were collected beneath and around the removed pad. Low levels of POL were detected in the surface soil samples and are likely associated with the asphalt.

Two temporary wells were installed during the RFI and low levels of VOCs and metals were detected. The site has been identified as a Supplemental Environmental Project (SEP) under the 1997 Order on Consent.

The RFI report was approved by CDPHE in December 2001 and a CMS was not imposed.

### STATUS

**ER,A**

**RRSE:** Low

**COCs:** POL

**MEDIA OF CONCERN:**

Groundwater

<b>PHASES</b>	<b>Start</b>	<b>End</b>
RFA .....	198210 .....	198301
CS .....	199904 .....	199909
RFI/CMS .....	200310 .....	200409
<b>LTM .....</b>	<b>200410 .....</b>	<b>200509</b>

**RC: 200409**

### CLEANUP STRATEGY

Perform a risk evaluation with NFA request (funded in FY03).

# SWMU 53 (FTC-033)

## FORMER WASTE OIL/SOLVENT USTs, BLDG 8000

### SITE DESCRIPTION

From 1973 to 1984, Fort Carson stored used oil and solvents generated at the Building 8000 Maintenance Facility prior to disposal. This site (SWMU 53) consisted of two 25,600-gallon tanks and associated piping from Building 8000. The tanks were removed in June of 1991, but the piping was left in place. A pump-and-treat system was installed in 1993 and then turned off in 1998, since it was unsuccessful in reducing contaminant concentrations.

Investigations around the tank pit between 1990 and 1993 identified petroleum hydrocarbons and chlorinated VOCs. This site was identified in the 1987 Compliance Order. In February 1997, soil samples were collected from within the tank pit and were found to contain chlorinated VOCs (including TCE). Sampling in 1998 found hydrocarbon and chlorinated VOCs contamination in the tank pit and at the northern and southern manholes associated with the piping. TCE has been found above groundwater standards in the immediate vicinity of the tank pit and northern and southern manholes. The RFI Report was submitted to CDPHE in 2000.

Based on comments from CDPHE on the RFI Report, the fluids remaining in the manholes were removed, the manholes were decontaminated, and the piping was plugged inside Building 8000 in 2001. In addition, free product recovery commenced as an IRA, and additional investigation upgradient of the northern manholes was performed to determine the source of chlorinated solvent contamination.

Based on the results of the additional investigation in 2001, a work plan was submitted in February 2004 to further evaluate the groundwater conditions for the entire Building 8000 complex and determine if a relationship exists between this SWMU and neighboring SWMUs. Groundwater for the neighboring SWMUs located at the Bldg 8000 Complex will be addressed under this SWMU, including the Former Long-Term Hazardous Waste Storage Area (FTC-041/SWMU 54), the Former Vapor Degreaser (FTC-058/SWMU 16) and the Battery Neutralization Shop, Building 8000 (FTC-045B/SWMU 28). This work plan was approved by CDPHE in November 2004.

### CLEANUP STRATEGY

Continue product removal (IRA) (prior year funds) and annual groundwater monitoring.

Perform additional RFI activities to define hydrogeologic conditions and groundwater contamination for the entire Building 8000 complex.

Submit revised RFI Report. Anticipate performing a CMS (partially funded FY05). Anticipated remedy is in-situ treatment.

### STATUS

**RRSE:** High

**COCs:** VOC's, Inorganics

**MEDIA OF CONCERN:**  
Soil, Groundwater

<b>PHASES</b>	<b>Start</b>	<b>End</b>
RFA .....	198803 .....	198804
CS .....	199703 .....	199902
<b>IRA .....</b>	<b>199105 .....</b>	<b>200709</b>
<b>RFI/CMS .....</b>	<b>199902 .....</b>	<b>200610</b>
DES .....	200610 .....	200709
CMI(C) .....	200610 .....	200709
LTM .....	200910 .....	201410

**RC: 200709**

# **SWMU 54 (FTC-041) FORMER LONG-TERM HAZ WASTE STORAGE AREA, BLDG 8000**

## **SITE DESCRIPTION**

This site (SWMU 54) is an open 50 square-foot concrete pad located in the northwest corner of the Building 8000 complex (the Consolidated Field Maintenance Shop). The pad has a central drain connected to the storm water line that emptied to B Ditch. The site reportedly was used for storage of various waste material including hydraulic fluid, transmission fluid, oil filters, paint, motor gasoline, and diesel fuel. Since 1986, the area has been used for storage of non-hazardous materials such as maintenance equipment, spare parts, and empty containers. Current site conditions indicate that the concrete pad is associated with parking and storage for the Building 8000 complex.

Elevated concentrations of lead were detected in soil samples and selenium in groundwater samples. Trace amounts of organic compounds were detected in both soil and groundwater samples.

Site reconnaissance and interviews with facility personnel have determined that no structures or additional concrete pad(s) were constructed at the site and conditions have not been altered since the area was originally used. Historical research was conducted in 1995 in preparation for an RFI Work Plan (1996).

The RFI investigation was conducted in August 2003 and the report submitted to CDPHE in March 2004. The RFI was approved in November 2004 and a CMS was not imposed.

## **CLEANUP STRATEGY**

Perform a risk evaluation with an NFA Request.

## **STATUS**

**ER,A**

**RRSE:** Low

**COCs:** Metals

**MEDIA OF CONCERN:**

Soil, Groundwater

<b>PHASES</b>	<b>Start</b>	<b>End</b>
RFA .....	198210.....	198301
CS .....	199706.....	199901
<b>RFI/CMS .....</b>	<b>200107 .....</b>	<b>200509</b>
<b>LTM.....</b>	<b>200510.....</b>	<b>200610</b>

**RC: 200509**

# SWMU 55-111 (FTC-023)

## USED/WASTE OIL TANKS (PAGE 1 OF 4)

### SITE DESCRIPTION

This FTC # consists of 57 used oil storage tank sites (SWMU 55-111). All of these tanks have been removed. Soil confirmation samples, taken prior to removal, were only analyzed for BTEX and total hydrocarbons. Thirteen of these sites were recommended to CDPHE for no further action, since the tanks were actually small ASTs that cannot be located.

The initial RFI was conducted in 2 phases, one for 11 sites and one for 33 sites. A Phase I RFI is being completed at all 44 sites. Elevated levels of hydrocarbon, chlorinated VOCs, and PAHs were detected. In 2001, the 11 Site RFI was submitted to CDPHE and additional field activities were conducted to address comments. In 2002, CDPHE requested that RFI reports for all 44 sites be submitted independently.

NFA at 13 former AST sites has been approved and was implemented into the Part B Permit in October 2003.

### STATUS

**ER,A**

**RRSE:** Medium

**COCs:** VOC's, SVOC's, Metals

**MEDIA OF CONCERN:**

Soil, Groundwater

PHASES	Start	End
RFA .....	198210 .....	198301
CS .....	199811 .....	199904
<b>RFI/CMS .....</b>	<b>199811 .....</b>	<b>200610</b>
DES .....	200510 .....	200610
IRA .....	200010 .....	200306
CMI(C) .....	200510 .....	200610
LTM .....	200610 .....	200710

**RC: 200610**

### SITE BREAKDOWN

RFI reports submitted: 21 = 57, 58, 59, 61, 64, 65, 66, 67, 68, 70, 71, 72, 81, 83, 84, 85, 90, 91, 96, 110, 111.

Additional RFI activities: 21 = 55, 56, 60, 62, 63, 69, 73, 74, 75, 76, 77, 78, 79, 80, 82, 86, 89, 92, 107, 109, 110.

Risk evaluation with NFA Request: 12 = 57, 58, 61, 66, 67, 71, 81, 83, 85, 90, 96, 111.

CMS Required: 1 = 84

Active Oil/Water separators (addressed under OMA in the near future, with an RFI that includes BMPs for the operation): 3 = 87, 88, 108.

### CLEANUP STRATEGY

Submit remaining RFI reports for all sites, preceded by letter work plan. Conduct additional field investigations as necessary. Anticipate performing risk assessments for all sites that will not have a CMS imposed. Anticipate performing a limited number of CMSs.

Anticipate implementing the CMI at a limited number of sites, to most likely include excavation and offsite disposal. Long term management will be carried out as needed (i.e. groundwater monitoring).

*Additional SWMU information is found on the following four pages:*



## SWMU 55-111 (FTC-023)

### USED/WASTE OIL TANKS (PAGE 2 OF 4)

SWMU #	Bldg #	Task	Timeframe work is anticipated to be initiated
<b>55</b>	523	RFI Work Plan	FY05
		Fieldwork	FY05
		RFI Report	FY06 (Previously Funded)
		NFA Request	FY07
<b>56</b>	301	Fieldwork	FY05
		RFI Report	FY05
		NFA Request	FY06
<b>57</b>	635	NFA Request	FY05
<b>58</b>	218	NFA Request	FY05
<b>59</b>	1302	NFA Request	FY06
<b>60</b>	1382	RFI Report	FY05
		NFA Request	FY06
<b>61</b>	1515	NFA Request	FY05
<b>62</b>	1682	RFI Report	FY05
		NFA Request	FY06
<b>63</b>	1692	RFI Report	FY06
		NFA Request	FY06
<b>64</b>	1882	NFA Request	FY06
<b>65</b>	1982	NFA Request	FY06
<b>66</b>	2082	NFA Request	FY05
<b>67</b>	2239	NFA Request	FY05
<b>68</b>	2392	Finalize RFI Report	FY05
		NFA Request	FY06
<b>69</b>	2434	Fieldwork	FY05
		RFI Report	FY06
		NFA Request	FY06
<b>70</b>	2492	NFA Request	FY06
<b>71</b>	2692	NFA Request	FY05
<b>72</b>	2735	NFA Request	FY06
<b>73</b>	2792	Fieldwork	FY05
		RFI Report	FY05
		NFA Request	FY06
<b>74</b>	2840	Fieldwork	FY05
		RFI Report	FY06
		NFA Request	FY06

## SWMU 55-111 (FTC-023)

### USED/WASTE OIL TANKS (PAGE 3 OF 4)

<b>SWMU #</b>	<b>Bldg #</b>	<b>Task</b>	<b>Timeframe work is anticipated to be initiated</b>
<b>75</b>	2940	RFI Report	FY05
		NFA Request	FY06
<b>76</b>	2992	RFI Report	FY05
		NFA Request	FY06
<b>77</b>	3092	Fieldwork	FY05
		RFI Report	FY06
		NFA Request	FY07
<b>78</b>	3192	Fieldwork	FY05
		RFI Report	FY06
		NFA Request	FY07
<b>79</b>	3292	Fieldwork	FY05
		RFI Report	FY06
		NFA Request	FY07
<b>80</b>	3874	RFI Work Plan	FY05
		Fieldwork	FY05
		RFI Report	FY06 (Previously Funded)
		NFA Request	FY07
<b>81</b>	8142	NFA Request	FY05
<b>82</b>	8152	RFI Report	FY05
		NFA Request	FY06
<b>83</b>	8200	NFA Request	FY05
<b>84</b>	8300	CMS Work Plan	FY05
		CMS Report	FY05
		Design	FY06
		Remedy	FY06
<b>85</b>	8930	NFA Request	FY05
<b>86</b>	9072	Fieldwork	FY05
		RFI Report	FY06
		NFA Request	FY07
<b>87</b>	9603	RFI Work Plan	FY06
		Fieldwork	FY06
		RFI Report	FY06

## SWMU 55-111 (FTC-023) USED/WASTE OIL TANKS (PAGE 4 OF 4)

SWMU #	Bldg #	Task	Timeframe work is anticipated to be initiated
		NFA Request	FY07
<b>88</b>	9606	RFI Work Plan	FY06
		Fieldwork	FY06
		RFI Report	FY06
		NFA Request	FY07
<b>89</b>	9609	Fieldwork	FY05
		RFI Report	FY06
		NFA Request	FY07
<b>90</b>	9620	NFA Request	FY05
<b>91</b>	9628	Finalize RFI Report	FY05
		NFA Request	FY06
<b>92</b>	MPRC	RFI Report	FY05
		NFA Request	FY06
<b>96</b>	1404	NFA Request	FY05
<b>107</b>	639	RFI Report	FY05
		NFA Request	FY06
<b>108</b>	749	RFI Work Plan	FY06
		Fieldwork	FY06
		RFI Report	FY06
		NFA Request	FY07
<b>109</b>	1392	Fieldwork	FY05
		RFI Report	FY06
		NFA Request	FY07
<b>110</b>	2427	NFA Request	FY06
<b>111</b>	8110	NFA Request	FY05

# SWMU 164 (FTC-070)

## UNDERGROUND STORAGE TANK NEAR BLDG 202

### SITE DESCRIPTION

The Paint Shop used this tank (SMWU 164) to hold paintbrush-cleaning chemicals. The building was removed in the late 1990s and the tank was removed in 1994. This site is now part of a vehicle parking lot.

Contents of the UST were determined to be POL products prior to removal. The excavation of contaminated soil was stopped after a chlorinated solvent was detected in one sample. Sampling in 1996-97 did not encounter chlorinated solvents in soil or groundwater and POL concentrations were below regulatory limits. Bis(2-ethylhexyl) phthalate has been detected above Colorado groundwater standards.

The RFI Report was submitted to CDPHE in January 2003. Based on their review, the CDPHE requested the installation of additional groundwater wells to assess the nature and extent of elevated concentrations of bis(2-ethylhexyl)phthalate detected in groundwater. The work plan to perform the additional work was submitted to CDPHE in August 2004, approved in September 2004 and implemented in November 2004. An extension request for the RFI report was approved by CDPHE in Feb 2005.

### STATUS

**ER,A**

**RRSE:** Low

**COCs:** VOC's, SVOC's, Metals

**MEDIA OF CONCERN:**

Groundwater, Soil

<b>PHASES</b>	<b>Start</b>	<b>End</b>
RFA .....	198801 .....	198803
CS .....	199610 .....	199912
<b>RFI/CMS .....</b>	<b>200010 .....</b>	<b>200610</b>
LTM .....	200610 .....	200710

**RC: 200610**

### CLEANUP STRATEGY

Revise and finalize RFI Report.

Perform a risk evaluation with NFA request.

# SWMU 167 (FTC-083)

## NORTH SPECKER AVENUE PLUMES (PAGE 1 OF 2)

### SITE DESCRIPTION

This site (SWMU 167) was identified following sampling conducted in conjunction with the UST removals at Building 749 (FTC-060) that detected PCE and TCE in groundwater. Additional investigations performed along North Specker Avenue between 1994 and 2002 located a source area and defined the nature and extent of contamination. Benzene, bis(2-ethylhexyl)phthalate, chloroform, 1,1-dichloroethene, ethylbenzene, tetrachloroethene (PCE), trichloroethene (TCE), methylene chloride, pentachlorophenol, and vinyl chloride have been detected in groundwater at concentrations exceeding Colorado Ground Water Standards. Four of the analytes (benzene, 1,1-dichloroethene, PCE, and TCE) have been detected consistently over the course of the investigation and have a wide spatial distribution. PCE forms a plume that averages approximately 450 feet wide and 3,900 feet long. The source of the plume begins in the vicinity of Buildings 633 through 636 and is attributed to several underground utilities and former in-line sand and grease traps that traversed the area.

The NFA approval for the USTs at Bldg 749 (FTC-060, an OPS site) is contingent on this plume being remediated.

In 2001, a pilot SVE/AS system was installed in the source area as an interim remedial action, and four abandoned sand and grease traps with impacted soils were removed from the source area. The Draft Final RFI Report was submitted to CDPHE in September 2002. The RFI Report was conditionally approved pending an indoor air assessment of occupied buildings overlying the chlorinated VOC plume.

Initial indoor air assessments were performed in October 2003 and May 2004 to capture the fall and spring seasons, respectively. An RFI Report Addendum summarizing the results of the indoor air assessment was submitted to CDPHE in October 2004. In December 2004 following review, the CDPHE requested additional indoor air sampling at the Building 1044 barracks to further evaluate the elevated detection of TCE above risk-based screening criteria in the basement. The work plan for additional sampling was approved by CDPHE in February 2005.

### STATUS

**ER,A**

**RRSE:** High

**COCs:** POL, TCE, PCE

**MEDIA OF CONCERN:**

Groundwater

<b>PHASES</b>	<b>Start</b>	<b>End</b>
RFA .....	199703 .....	199705
CS .....	199703 .....	199705
RFI/CMS .....	199705 .....	200610
<b>DES .....</b>	<b>200510 .....</b>	<b>200610</b>
<b>IRA .....</b>	<b>200103 .....</b>	<b>200509</b>
<b>CMI(C) .....</b>	<b>200510 .....</b>	<b>200709</b>
LTM .....	200710 .....	201210

**RC: 200709**

## **SWMU 167 (FTC-083)**

### **NORTH SPECKER AVENUE PLUMES (PAGE 2 OF 2)**

#### **CLEANUP STRATEGY**

Finalize RFI Report Addendum with additional indoor air data collected in May 2005.

Continue IRA of SVE/AS system through Sep 05 at the source area.

Continue annual groundwater monitoring to track plume migration.

Perform CMS (funded with prior year funds).

Implementation of selected remedy.

# SWMU 168 (FTC-093) FORMER POW CAMP

## SITE DESCRIPTION

The Former Prisoner of War Camp area (SWMU 168) was not identified by Fort Carson or CDPHE as an area of environmental concern and was not included in the initial Part B Permit. The site was discovered during construction activities in 2000. In late July 2000, construction activities uncovered an orange-red substance from the underlying soil near the intersection of Mabry Court and Funk Avenue on the west side. These soils were located on the edge of what had at one time been a prisoner of war camp.

Analysis of the stained soils detected pentachlorophenol. Due to the potential of delaying the contractor that was doing the utility installation, the decision was made to excavate the impacted soil (~75cy) with off-site disposal.

Following excavation, confirmatory samples detected low levels of PCP at the bottom of the excavation (greater than 20 ft bgs). Soil was excavated to bedrock. Groundwater was not encountered during excavation activities. The site was backfilled and a road was built over the site.

A Draft Final RFI report was submitted to CDPHE in Jan 2002. Based on comments, additional site investigations were performed in June 2004 to further evaluate the nature and extent of PCP. Results of the additional fieldwork further defined the location of the former excavation and identified 2,4-dinitrotoluene and n-nitroso-di-n-propylamine at concentrations above screening criteria in a soil sample collected outside of the former excavation. As a result, another work plan will be submitted to further define the nature and extent of the PCP and the newly identified contaminants.

## CLEANUP STRATEGY

Perform additional fieldwork.

Finalize RFI report.

Perform CMS.

Implement selected remedy (anticipated to include soil excavation).

## STATUS

**ER,A**

**RRSE:** Low

**COCs:** Explosives, PCP

**MEDIA OF CONCERN:**

Soil

PHASES	Start	End
RFA .....	200009 .....	200011
CS .....	200009 .....	200011
<b>RFI/CMS .....</b>	<b>200011 .....</b>	<b>200610</b>
DES .....	201010 .....	201109
CMI(C) .....	201010 .....	201110
LTM .....	201110 .....	201210

**RC: 201110**



**FORT CARSON  
INSTALLATION RESTORATION  
PROGRAM**

**RESPONSE COMPLETE SITES**

## **SUMMARY OF RESPONSE COMPLETE SITES LISTED IN AEDB-R WITH ONGOING LTM**

SWMU 4	FTC-008	Landfill 4
SWMU 5	FTC-009	Landfill 5
SWMU 18	FTC-079	Sludge Trench Pit
SWMU 27	FTC-044	Drainage Ditch at Bldg 301
SWMU 29	FTC-045A	Battery Shop at Building 8030
SWMU 30	FTC-045C	Battery Shop at Bldg. 8142
SWMU 31	FTC-048	Demolition Area
SWMU 34	FTC-032	Vehicle Wash
SWMU 50	FTC-024	DRMO Inactive Haz. Waste Storage Area
SWMU 51	FTC-043	DIO Haz. Waste Storage Area
SWMU 54	FTC-041	Former Haz. Waste Storage Area at Bldg. 8000
SWMU 57	FTC-023	Former Used/Waste Oil Tank Site, Bldg 635/631
SWMU 58	FTC-023	Former Used/Waste Oil Tank Site, Bldg 218
SWMU 61	FTC-023	Former Used/Waste Oil Tank Site, Bldg 1515
SWMU 64	FTC-023	Former Used/Waste Oil Tank Site, Bldg 1882
SWMU 66	FTC-023	Former Used/Waste Oil Tank Site, Bldg 2082
SWMU 67	FTC-023	Former Used/Waste Oil Tank Site, Bldg 2239
SWMU 71	FTC-023	Former Used/Waste Oil Tank Site, Bldg 2692
SWMU 81	FTC-023	Former Used/Waste Oil Tank Site, Bldg 8142
SWMU 83	FTC-023	Former Used/Waste Oil Tank Site, Bldg 8200
SWMU 85	FTC-023	Former Used/Waste Oil Tank Site, Bldg 8930
SWMU 90	FTC-023	Former Used/Waste Oil Tank Site, Bldg 9620
SWMU 96	FTC-023	Former Used/Waste Oil Tank Site, Bldg 1404
SWMU 111	FTC-023	Former Used/Waste Oil Tank Site, Bldg 8110

## **SUMMARY OF RESPONSE COMPLETE SITES LISTED IN AEDB-R THAT REQUIRE NO FURTHER ACTION**

SWMU 1	FTC-005	Landfill 1
SWMU 6	FTC-010	Landfill 6
SWMU 10	FTC-014	Landfill 10
SWMU 12	FTC-016	Landfill 12
SWMU 16	FTC-076	Industrial Waste Water System
SWMU 17	FTC-058	Jet Spray Washers
SWMU 20	FTC-030	Waste Oil Burner Building 1860
SWMU 21	FTC-059	Industrial Waste Treatment Plant Ponds (Active)
SWMU 21	FTC-031	Industrial Waste Water Plant (Active)
SWMU 22	FTC-042	Sewage Treatment Plant (Active)
SWMU 26	FTC-073	Equalization Basin, Bldg 1399
SWMU 28	FTC-045B	Battery Acid Neutralization, Bldg 8000
SWMU 32	FTC-036	Golf Course Holding Pond
SWMU 33	FTC-034	Golf Course Sewage Spreading Area
SWMU 37	FTC-046	Veterinary Clinic Incinerator
SWMU 38	FTC-049	Commissary Incinerator
SWMU 39	FTC-050	Classified Document Incinerator, Bldg. 1430
SWMU 41	FTC-038	Silver Recovery Unit, Bldg 6001
SWMU 42	FTC-037	Silver Recovery Unit, Bldg. 6010
SWMU 43	FTC-035	Silver Recovery Unit, Bldg. 6271
SWMU 44	FTC-028	Silver Recovery Unit, Bldg. 6270
SWMU 47	FTC-019	Range 121, OD Grounds, Active Site
SWMU 48	FTC-027	Open Burn Grounds, Range 123
SWMU 49	FTC-025	Happy Hollow Haz. Waste and PCB Storage Facility (Active Site)
SWMU 165	FTC-077	Battery Shop, Bldg 8110
SWMU 166	FTC-078	Wash Rack, Bldg 8110
SWMU 169	FTC-088	UST at Building 1211
	FTC-029	Old Army Hospital Incinerator
	FTC-051	Former UST Site, Bldg 9648
	FTC-052	Former UST Site, Bldg 1092
	FTC-053	Former UST Site, Bldg 7500
	FTC-054	Former UST Site, Bldg 8000
	FTC-055	Former UST Site, Bldg 981
	FTC-056	Former UST Site, Bldg 1382
	FTC-060	Former UST Site, Bldg 749
	FTC-061	Former UST Site, Bldg 1392
	FTC-062	Former UST Site, Bldg 2392
	FTC-063	Former UST Site, Bldg 2494
	FTC-064	Former UST Site, Bldg 2692
	FTC-065	Former UST Site, Bldg 2792
	FTC-066	Former UST Site, Bldg 3192
	FTC-067	Former UST Site, Bldg 8200

## **SUMMARY OF RESPONSE COMPLETE SITES LISTED IN AEDB-R THAT REQUIRE NO FURTHER ACTION**

FTC-068	Former UST Site, Bldg 8300
FTC-069	Pinon Canyon Maneuver Site UST Site
FTC-071	Former UST Site, Bldg 1100
FTC-072	Former UST Site, Bldg 700
FTC-081	Former UST Site, Bldg 638
FTC-082	Former UST Site, Bldg 2992

### PAST MILESTONES

In September 1995, Fort Carson was issued a RCRA Part B Permit. This required the submission of 85 RFI work plans within a 180-day period. The immediate milestone then became the completion of that task. It was accomplished within the allowed time frame.

During calendar year 1996, the primary focus was to conduct several RFI investigations. Included in this was the Grit Oil Pit, which was included in an Order on Consent that was issued to Fort Carson.

During calendar year 1996 and 1997, the primary milestones at Fort Carson were to obtain state approval for landfill caps at 3 locations, as well as, the removal plan for sludges at the Equalization Basin (an active site).

In May 1998, the sludges were removed from the Equalization Basin and the basin liner was decontaminated.

Between September 2000 and March 2001, Landfill 6 waste material was relocated.

In September 1999 and March 2000, a barrier cap, complete with an asphalt parking lot, was installed on the western 5 acres of Landfill 5, adjacent to Building 8930 (Motor Pool).

Between February 2000 and September 2000, an evapotranspiration cap was placed over the eastern 15 acres of Landfill 5.

Between September 1999 and December 1999, a drainage channel was constructed down the municipal portion of Landfill 1 to replace a degraded culvert.

In 1998, a temporary cover was installed as an interim surface water control measure at the Grit/Oil Pit (SWMU 13/FTC-020).

In 2002, no further action was selected by the CDPHE for Landfill 10 (SWMU 10/FTC-014), Landfill 12 (SWMU 12/FTC-016), and the Jet Spray Washers (SWMU 17/FTC-058).

In November 2004, the CDPHE granted final approval of the Landfill 5 (SWMU 5/FTC-010) evapotranspiration cap, and in December 2004, the CDPHE acknowledged that Landfill 5 has not contributed to groundwater contamination above screening levels downgradient of the landfill. As a result, the SWMU has completed the remedy phase of corrective action and is only undergoing long-term management. In January 2005, no further action was selected by the CDPHE for the Range 1A, Open Burn Grounds (SWMU 46/FTC-018).

Between November 2004 and January 2005, the contaminated media from the Grit/Oil Pit (SWMU 13/FTC-020) was removed as an IRA.

## PROJECTED MILESTONES

*Phase Completion Milestones (completion dates for all RCRA phases leading to LTM):*

**RFI/CMS: FY10**

**DES: FY11**

**CMI(C): FY13**

**CMI(O): FY08**

*Completion Date of all RA(C) Activities:*

**2007 – RC at High Risk Sites**

**2011 – RC at Medium Risk Sites**

**2014 – RC at Low Risk Sites**

*Completion Date of IRP (including LTM phase): 2034*

## FORT CARSON IAP SCHEDULE

(Based on current constrained funding)

			Current										Future	
AEDB #	SITE TITLE	RRSE	PHASE	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15+	
SWMU 2, FTC-006	Landfill 2/3 (1960-1978)	Med	RFI/CMS											
			DES											
			CMI(C)											
			LTM											
SWMU 4, FTC-008	Landfill 4 (1957)	Low	LTM											
SWMU 5, FTC-009	Landfill 5 (1946-1956)	Med	LTM											
SWMU 7, FTC-011	Landfill 7 (1968-1978)	Low	RFI/CMS											
			CMI(C)											
			LTM											
SWMU 8, FTC-012	Landfill 8 (1972-1973)	Low	DES											
			CMI(C)											
			LTM											
SWMU 9, FTC-013	Landfill 9 (1965-1973)	Med	RFI/CMS											
			DES											
			CMI(C)											
			LTM											
SWMU 13, FTC-020	Grit/Oil Pit	High	DES											
			CMI(C)											
			LTM											
SWMU 14, FTC-026	Pete's Hill	Low	CMI(C)											
			LTM											

## FORT CARSON IAP SCHEDULE

(Based on current constrained funding)

Current			Future										
AEDB #	SITE TITLE	RRSE	PHASE	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15+
SWMU 16, FTC-058	Former Vapor Degreaser	Med	LTM										
SWMU 19, FTC-047	Land Spreading Field	Low	LTM										
SWMU 24, FTC-021/ 022	Abandoned Fire Training Area	Med	DES										
			CMI(C)										
			CMI(O)										
			LTM										
SWMU 34, FTC-032	Vehicle Wash Rack Drainage Ditches	Low	LTM										
SWMU 36, FTC-075	Old Central Wash Rack	Low	LTM										
SWMU 45, FTC-017	Abandoned Open Burn	Med	RFI/CMS										
			LTM										
SWMU 53, FTC-033	Former UST Site, Building 8000	High	RFI/CMS										
			DES										
			CMI(C)										
			LTM										



## FORT CARSON IAP SCHEDULE

(Based on current constrained funding)

			Current							Future			
AEDB #	SITE TITLE	RRSE	PHASE	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15+
SWMU 54, FTC-041	Former Long-Term Haz Waste Storage Area, Bldg 8000	Low	LTM										
SWMU 55- 111, FTC-023	Former Used/Waste Oil Storage Tanks	Med	RFI/CMS										
			DES										
			CMI(C)										
			LTM										
SWMU 164, FTC-070	UST Bldg. 201	Low	RFI/CMS										
			LTM										
SWMU 167, FTC-083	North Specker Ave	High	DES										
			CMI(C)										
			LTM										
SWMU 168, FTC-093	POW Camp	Low	RFI/CMS										
			DES										
			CMI(C)										
			LTM										

**PRIOR YEAR FUNDING**

<b>FY80-90</b>	<b>\$</b>	<b>544,000</b>
<b>FY91</b>	<b>\$</b>	<b>3,000</b>
<b>FY92</b>	<b>\$</b>	<b>240,000</b>
<b>FY93</b>	<b>\$</b>	<b>277,000</b>
<b>FY94</b>	<b>\$</b>	<b>2,734,000</b>
<b>FY95</b>	<b>\$</b>	<b>3,641,642</b>
<b>FY96</b>	<b>\$</b>	<b>11,664,950</b>
<b>FY97</b>	<b>\$</b>	<b>1,425,000</b>
<b>FY98</b>	<b>\$</b>	<b>2,775,000</b>
<b>FY99</b>	<b>\$</b>	<b>2,795,000</b>
<b>FY00</b>	<b>\$</b>	<b>2,892,894</b>
<b>FY01</b>	<b>\$</b>	<b>2,834,000</b>
<b>FY02</b>	<b>\$</b>	<b>2,821,000</b>
<b>FY03</b>	<b>\$</b>	<b>2,815,000</b>
<b>FY04</b>	<b>\$</b>	<b>1,891,939</b>
<b>FY05 (expected)</b>	<b>\$</b>	<b>1,306,000</b>
<b>Total Prior Year</b>	<b>\$</b>	<b>20,110,688</b>

**CURRENT YEAR FUNDING**

<b>FY06</b>	<b>\$</b>	<b>3,774,000</b>
-------------	-----------	------------------

***TOTAL IRP PROGRAM COSTS:*** \$ 43,151,688

---

## Community Involvement

In 1994, Fort Carson was in the process of voluntarily forming a Restoration Advisory Board when a local environmental organization petitioned the installation to form one. Initially, community involvement in the RAB was high, but has since declined. Information given to the public has increased the trust level of the community and RAB members.

Fort Carson's RAB was established in 1994 to inform interested citizens about Fort Carson's environmental restoration activities, and for representatives of the surrounding communities to provide input to Fort Carson for consideration in the environmental restoration decision making process. It is a citizen-based advisory group of over 200 members that provides the installation input for community decision-making that will be responsive to community needs and concerns. The RAB is also charged with distributing information about environmental restoration to the communities it represents.

Progress reports on corrective action processes and technical support to the RAB are key factors in promoting informed and valuable reviews and comments from this group. Public meetings are held, as appropriate or required, in order to provide additional forums for community input. The community co-chair or a RAB member is invited to attend Fort Carson's annual IAP Meeting and provides input regarding the community's environmental restoration priorities. RAB members have been participants since 1997.

In December 1998, letters of introduction were mailed to the new neighborhoods that have formed in the past three years. These are to the immediate west and north of the Installation. As a follow up, Fort Carson conducted interviews with 11 respondents. A Community Involvement Plan has been generated as a result of the public outreach efforts of Fort Carson, as well as requirements outlined in the Part B Permit.